Issue 217
PS
1970 Series
December
THE PREVENTIVE MAINTENANCE MONTHLY
WHAT?? ME DRINK OUTA A DIRTY SODA CAN?? :FEH:
HMM, Y'DON'T SEEM T'BE THAT FUSSY WHEN Y'R FUELIN' MY VEHICLES!
Will Eisner
BE YOUR OWN INSPECTOR
M102 TOWED HOWITZER
PAGES 2-16

JUST ENOUGH . . .

THE RIGHT PARTS AT THE

The Army is taking a good hard look at just where how many repair parts are stocked.

It's been found, for example, that PLL's of fighting outfits were too big to haul around. And, many parts are stocked in forward areas where they are seldom needed.

So, with high-speed electronic ordering and fast air delivery available, the supply "wheels" are working on the idea of having the units out where the fighting is, with the absolute minimum load of repair parts. The seldom-used items would be farther back in support units, with rarely-used items back in CONUS depots ready to move out at a minute's notice.

This operation is called "Echelonment of Supply Levels," and it's part of the Army's Logistics Offensive.

Your PLL, for example, is likely to get trimmed a bit. The loads of parts your DSU and GSU carry will get cut down to

JUST ENOUGH . . .

THE RIGHT PARTS AT THE RIGHT PLACE

The Army is taking a good hard look at just where how many repair parts are stocked.

It's been found, for example, that PLL's of fighting outfits were too big to haul around. And, many parts are stocked in forward areas where they are seldom needed.

So, with high-speed electronic ordering and fast air delivery available, the supply "wheels" are working on the idea of having the units out where the fighting is, with the absolute minimum load of repair parts. The seldom-used items would be farther back in support units, with rarely-used items back in CONUS depots ready to move out at a minute's notice.

This operation is called "Echelonment of Supply Levels," and it's part of the Army's Logistics Offensive.

Your PLL, for example, is likely to get trimmed a bit. The loads of parts your DSU and GSU carry will get cut down to what are needed right away by the units they support. Even field depots will get their stocks chopped.

With stockage based strictly on demand, every outfit can manage its load better. It'll save Uncle a load of Green, and it'll help make sure you get what you need when you need it.

PS

Published by the Department of the Army for the information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from U. S. Army Maintenance Board, Attn.: PS Magazine, Fort Knox, Kentucky 40121.

THE PREVENTIVE MAINTENANCE MONTHLY

Issue No. 217 1970 Series

December

IN THIS ISSUE

FIREPOWER 2-21

BYOI—M102 2-16
M101 Range Chart 17
Commando Car 17
M18 (FADAC) 18-20
EFC Rounds 21

GROUND MOBILITY 22-27

2½-ton Truck 22-23
M37B1 22-23, 27
1¼-ton Truck 26
Engine PM 24
M151 25, 26

AIR MOBILITY 37-47

UH-1 37, 38-39, 46
CH-47 40, 41
OH-58A 42-43
Test Flight 44
OH-6A 44
Penetrant Poop 45
U-6A Oil Change 45
AH-1G 46, 47
Tools 47

COMMUNICATIONS 48-60

MX-7778 ( ) GRC 48-49
SB-86/PT 50-54
TA-182/U, TH-5/TG 55
Vacuum Tube Care 55
SB-22/PT 56-60
AN/GRA-39 60

COMBAT SUPPORT EQUIPMENT

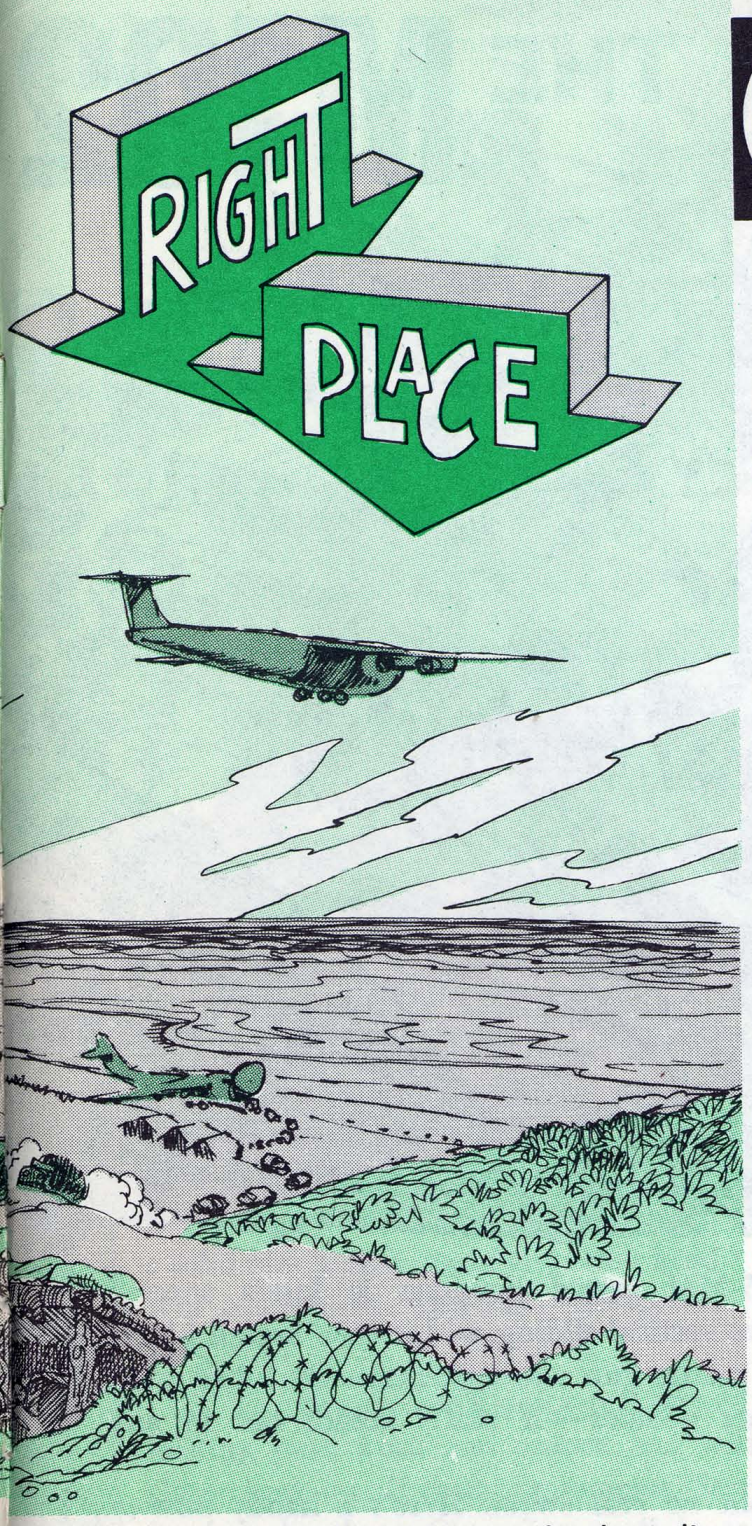
Fuel Nozzle 61
Radioactive Test Sample 62
M59 Lube 62
Skin Protection 63
Battery Charging 63
Tank and Pump Unit 64
New Publications 28
Supply 5, 12, 17, 26, 37, 40, 43, 45, 48, 52, 55, 61, 62 & 63.

Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 26 February 1968.

DISTRIBUTION: In accordance with requirements submitted on DA Form 12-4.

PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

Sgt. Half-Mast,
PS Magazine,
Fort Knox, Ky.
40121



what are needed right away by the units they support. Even field depots will get their stocks chopped.

With stockage based strictly on demand, every outfit can manage its load better. It'll save Uncle a load of Green, and it'll help make sure you get what you need when you need it.

PS

Published by the Department of the Army for the Information of organizational maintenance and supply personnel. Distribution is made through normal publication channels. Within limits of availability, older issues may be obtained direct from U. S. Army Maintenance Board, Attn.: PS Magazine, Fort Knox, Kentucky 40121.

THE **PREVENTIVE MAINTENANCE** MONTHLY

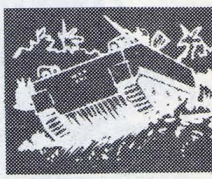
Issue No. 217 1970 Series

December

IN THIS ISSUE

FIREPOWER 2-21

BYOI—M102 **2-16**
M101 Range Chart **17**
Commando Car **17**
M18 (FADAC) **18-20**
EFC Rounds **21**



GROUND MOBILITY 22-27

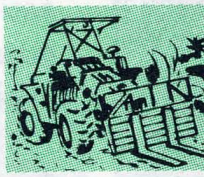
2½-ton Truck **22-23**
M37B1 **22-23, 27**
Engine PM **24**
M151 **25, 26**
1¼-ton Truck **26**

AIR MOBILITY 37-47

UH-1 **37, 38-39, 46**
CH-47 **40, 41**
OH-58A **42-43**
Test Flight **44**
OH-6A **44**
Penetrant Poop **45**
U-6A Oil Change **45**
AH-1G **46, 47**
Tools **47**

COMMUNICATIONS 48-60

MX-7778 ( ) GRC **48-49**
SB-86/PT **50-54**
TA-182/U, TH-5/TG **55**
Vacuum Tube Care **55**
SB-22/PT **56-60**
AN/GRA-39 **60**



COMBAT SUPPORT EQUIPMENT

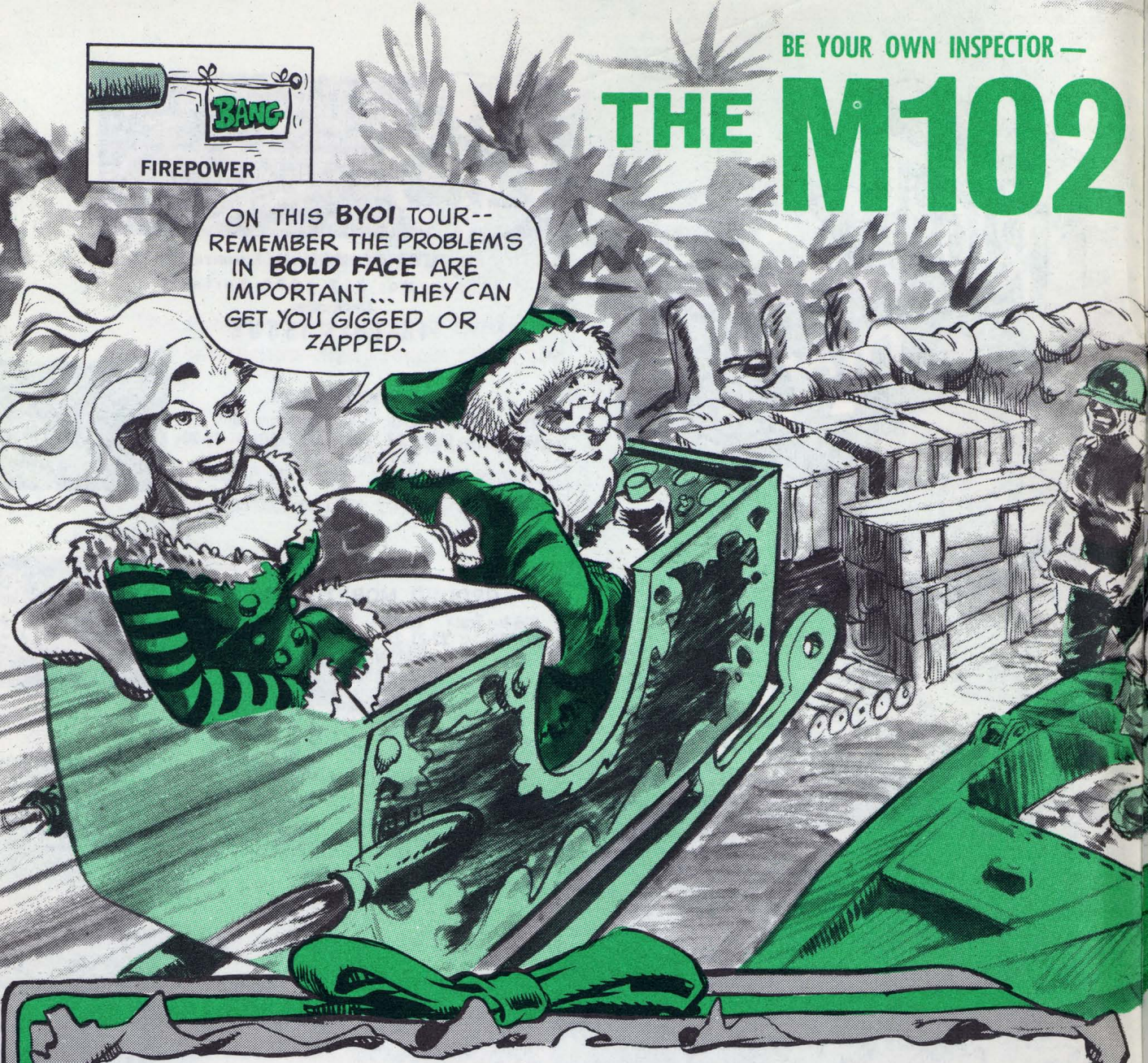
Fuel Nozzle **61**
Radioactive Test Sample **62**
M59 Lube **62**
Skin Protection **63**
Battery Charging **63**
Tank and Pump Unit **64**
New Publications **28**
Supply **5, 12, 17, 26, 37, 40, 43, 45, 48, 52, 55, 61, 62 & 63.**

Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 26 February 1968.

DISTRIBUTION: In accordance with requirements submitted on DA Form 12-4.

PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

Sgt. Half-Mast,
PS Magazine,
Fort Knox, Ky.
40121



BE YOUR OWN INSPECTOR —

THE M102

Your streamlined, airmobile 105-MM towed howitzer is kinda special. What with its aluminum carriage, its vertical-sliding, wedge-type breech block, anti-friction metal stripping on the cradle gun ways, permanently lubed components, firing platform — plus other goodies — it really stands out in any artillery line-up.

PM-wise it's kinda special too, but no real sweat. Here's a handy how-to check-list to help you pin-point its PM needs.

Keep your M102 as clean and dry as possible. Take care that all parts are free of rust and corrosion, spot paint as needed and lube it by its LO. Before you tackle the over-all weapon, here're a couple of special PM pointers you'd best tattoo on your chest.

BE YOUR OWN INSPECTOR—

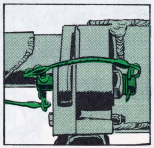
THE M102 TOWED HOWITZER

Your streamlined, airmobile 105-MM towed howitzer is kinda special. What with its aluminum carriage, its vertical-sliding, wedge-type breech block, anti-friction metal stripping on the cradle gun ways, permanently lubed components, firing platform—plus other goodies—it really stands out in any artillery line-up.

PM-wise it's kinda special too, but no real sweat. Here's a handy how-to check-list to help you pin-point its PM needs.

Keep your M102 as clean and dry as possible. Take care that all parts are free of rust and corrosion, spot paint as needed and lube it by its LO. Before you tackle the over-all weapon, here're a couple of special PM pointers you'd best tattoo on your chest.

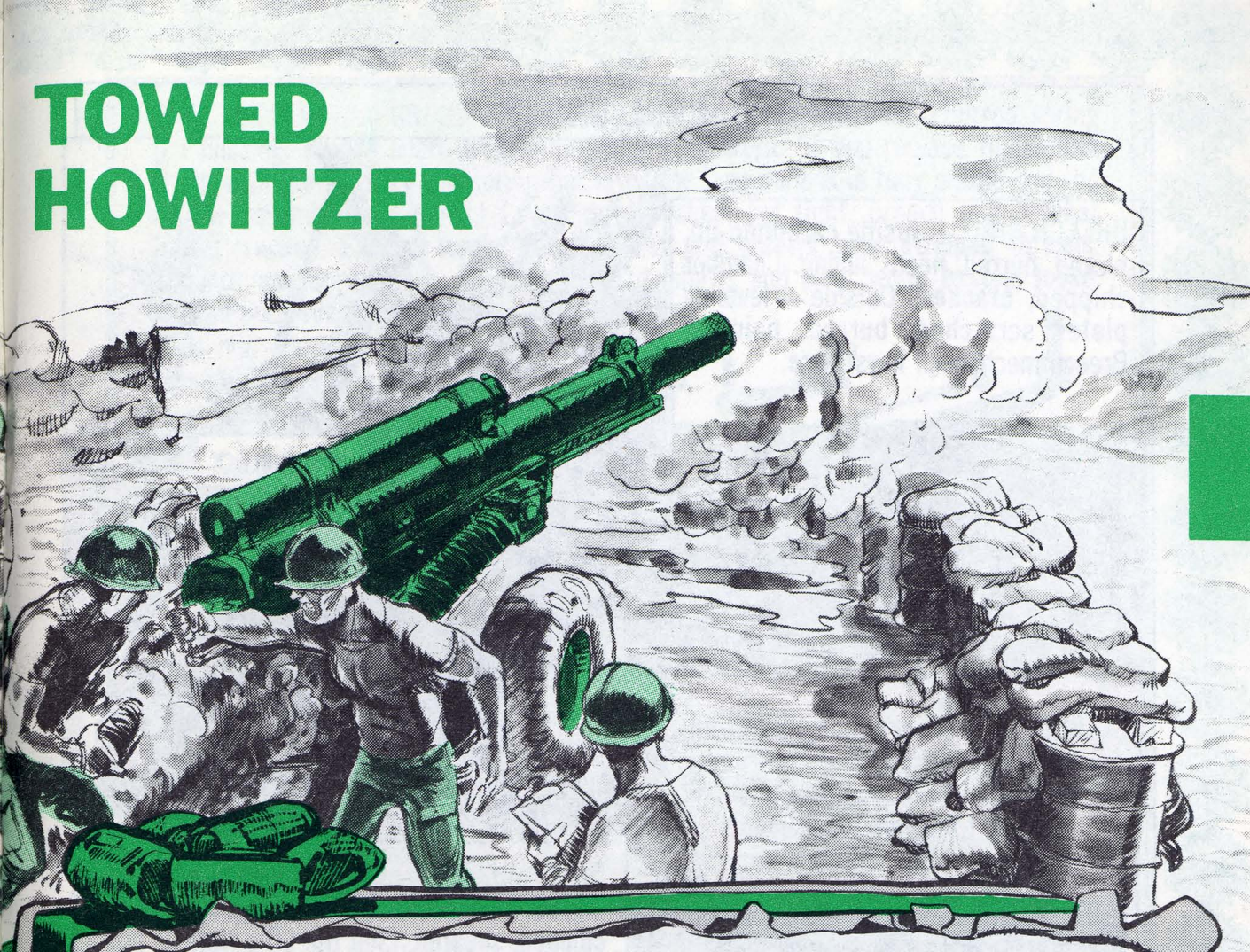
1. Never lube the gun-way stripping. Lube will damage the special coating on the anti-friction metal. Never lube the platform's ball socket or carriage pivot. They're covered with a solid film lube. Lube of any other kind will contaminate and ruin the special lube film.



2. The weapon has 8 quick-release and cable-anchored locking pins. Lock and unlock 'em with care. Keep a close check on all their components. Store 'em carefully in their brackets. Clean 'em well in solvent and lube 'em with GAA. Never modify the pins . . . common hardware can rob 'em of their quick-release or locking features. However, if a pin snaps its plastic-coated cable, you can use a length of small chain or wire to replace the original cable. Just take care your substitute cable is smooth so it'll not snag your hands.

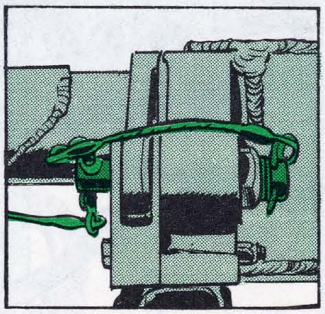
PS MORE

TOWED HOWITZER



1. Never lube the gun-way stripping. Lube will damage the special coating on the anti-friction metal. Never lube the platform's ball socket or carriage pivot. They're covered with a solid film lube. Lube of any other kind will contaminate and ruin the special lube film.

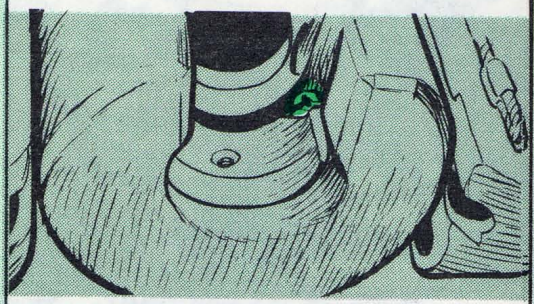
2. The weapon has 8 quick-release and cable-anchored locking pins. Lock and unlock 'em with care. Keep a close check on all their components. Store 'em carefully in their brackets. Clean 'em well in solvent and lube 'em with GAA. Never modify the pins . . . common hardware can rob 'em of their quick-release or locking features. However, if a pin snaps its plastic-coated cable, you can use a length of small chain or wire to replace the original cable. Just take care your substitute cable is smooth so it'll not snag your hands.



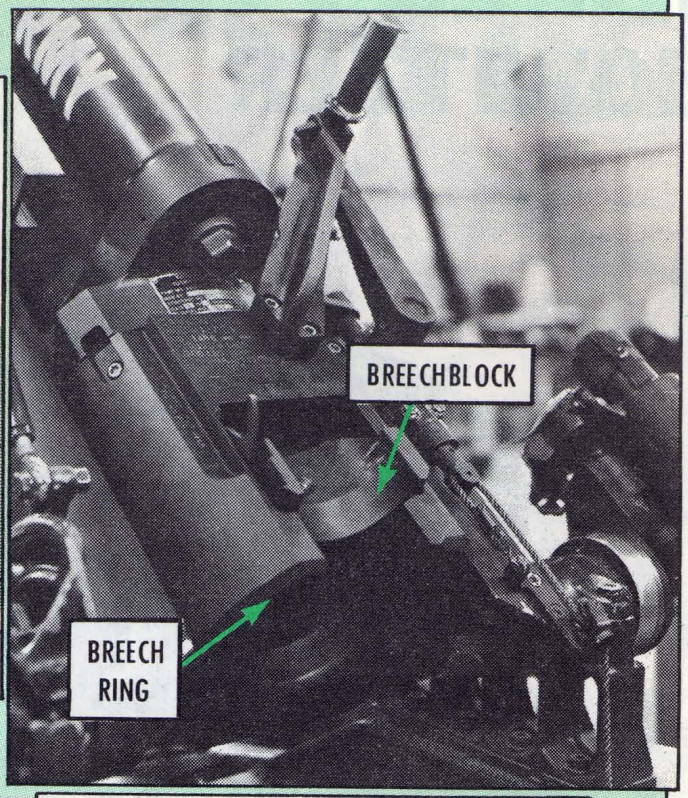
PS MORE

BARREL GROUP

BREECH RING — Inside carboned-up, nicked, burred, needs lubing. Chamber chipped, **cracked.** Outside — leveling plates scratched, burred, painted. Breech mechanism keys **loose.**



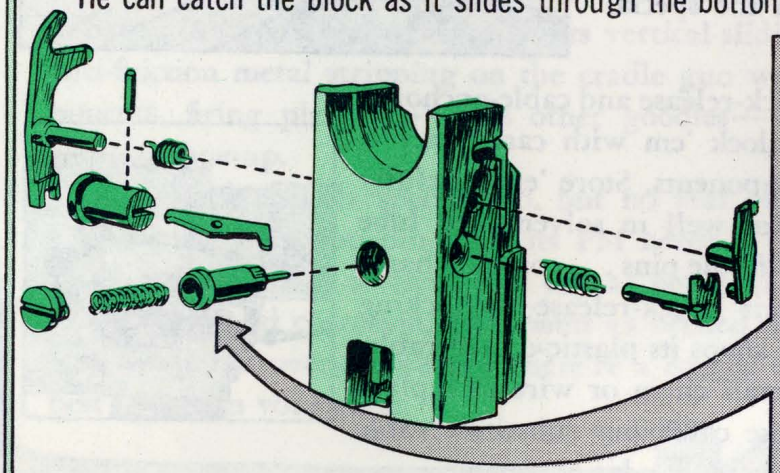
EXTRACTORS — **Broken, sluggish,** worn.



BARREL EXTERIOR — **Gouged.**

BORE/MUZZLE — **Cracked,** needs lubing. Bore lands **raised, flattened, gouged, chipped, sheared.** (See the LO's Note 1 on lubing the cannon.)

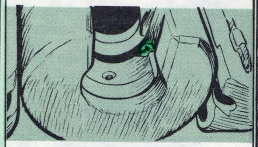
BREECHBLOCK — **Cracked,** scarred, **binds,** (It must slide in and out easy-like.) Firing pin hole **worn, nicked, burred.** Cocking lever **broken,** worn; spring pin **worn, broken, missing, wrong** or **weak** spring. The firing trigger, sear or sear spring, **worn, sluggish, wrong** or **weak** spring. Retainer or retractor **broken,** worn, burred. Bushing worn, **cracked, loose,** burred. (You need a buddy to help you remove the breechblock. He can catch the block as it slides through the bottom of the breech ring.)



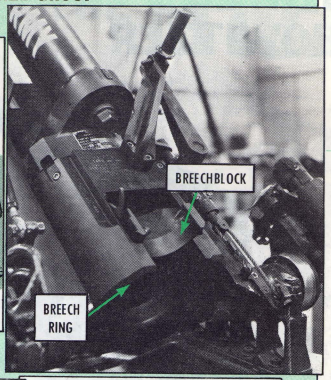
FIRING PIN GROUP — Retaining ring missing, sprung. Firing pin **deformed, cracked,** worn. Spring **weak, kinked, missing.** Firing pin stop worn, **broken.** Firing pin guide **broken,** worn. Spring pin **missing, busted.** (Disassemble the firing pin group only as needed for inspection and repair.)

BARREL GROUP

BREECH RING — Inside carboned-up, nicked, burred, needs lubing. Chamber chipped, **cracked.** Outside — leveling plates scratched, burred, painted. Breech mechanism keys **loose.**



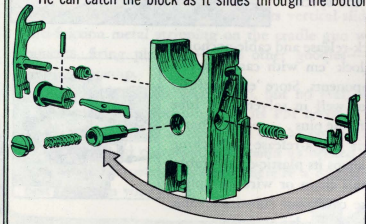
EXTRACTORS — **Broken, sluggish,** worn.



BARREL EXTERIOR — **Gouged.**

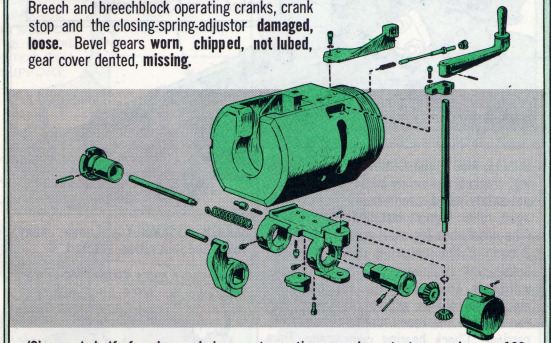
BORE/MUZZLE — **Cracked,** needs lubing. Bore lands **raised, flattened, gouged, chipped, sheared.** (See the LO's Note 1 on lubing the cannon.)

BREECHBLOCK — **Cracked,** scarred, **binds,** (It must slide in and out easy-like.) Firing pin hole **worn, nicked, burred.** Cocking lever **broken,** worn; spring pin **worn, broken, missing, wrong** or **weak** spring. The firing trigger, sear or sear spring, **worn, sluggish, wrong** or **weak** spring. Retainer or retractor **broken,** worn, burred. Bushing worn, **cracked, loose,** burred. (You need a buddy to help you remove the breechblock. He can catch the block as it slides through the bottom of the breech ring.)



FIRING PIN GROUP — Retaining ring missing, sprung. Firing pin **deformed, cracked,** worn. Spring **weak, kinked, missing.** Firing pin stop worn, **broken.** Firing pin guide **broken,** worn. Spring pin **missing, busted.** (Disassemble the firing pin group only as needed for inspection and repair.)

BREECH OPERATING GROUP — Operating lever **loose, cracked,** handle burred, spring pin **missing,** handle shaft **broken,** retaining ring **worn.** (If you replace the handle shaft, drill the hole for the spring pin after the breechblock is fully closed and the handle assembly is latched.) Lever stop **cracked,** not tight. Breech ring bracket loose, **cracked.** Springs **weak, kinked.** Bolts and screws have **stripped threads.** Straight and spring pins, plungers, detent, shafts and pivot worn, **busted, loose.** Breech and breechblock operating cranks, crank stop and the closing-spring-adjustor **damaged, loose.** Bevel gears **worn, chipped, not lubed,** gear cover dented, **missing.**

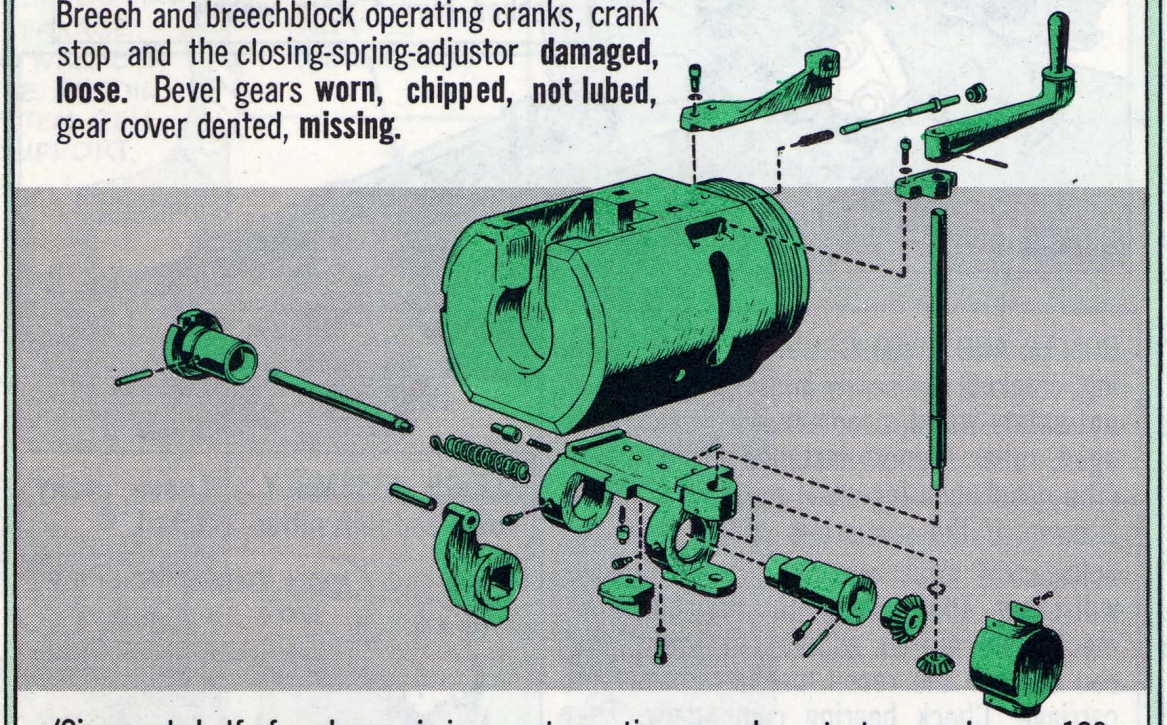


(Since only half of each gear is in use at one time, you have to turn each gear 180 degrees (as needed) to get the least worn sections in use. If the breechblock still doesn't close tight after turning the gears, replace the gears. Always assemble the breechblock and the breech ring exactly as lined-up in Figures 37 and 40 in the -12 TM.)

FIRING LINKAGE ASSEMBLY — Pawl **cracked,** worn, **not alined** with firing plunger, its spring pin **missing, damaged.** Detent plunger **loose, binds,** its housing bent, hardware **loose, missing.** Plunger clevis **cracked, loose,** cradle bracket **busted,** roller **loose;** lanyard **frayed,** its handle cracked, missing. **Wrong lanyard** (FSN 1015-317-2484 gets the right one). S-hook, pulley, roller worn, burred. (Shorten the lanyard to about 6 inches. That way it'll not fly forward and get crushed in the cradle during recoil.

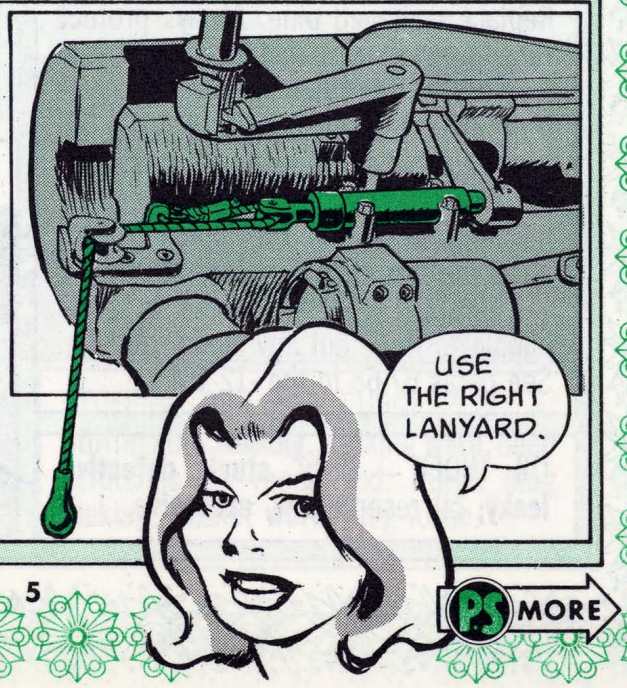
P3 MORE

BREECH OPERATING GROUP — Operating lever **loose, cracked,** handle burred, spring pin **missing,** handle shaft **broken,** retaining ring **worn.** (If you replace the handle shaft, drill the hole for the spring pin after the breechblock is fully closed and the handle assembly is latched.) Lever stop **cracked,** not tight. Breech ring bracket loose, **cracked.** Springs **weak, kinked.** Bolts and screws have **stripped threads.** Straight and spring pins, plungers, detent, shafts and pivot worn, **busted, loose.** Breech and breechblock operating cranks, crank stop and the closing-spring-adjustor **damaged, loose.** Bevel gears **worn, chipped, not lubed,** gear cover dented, **missing.**



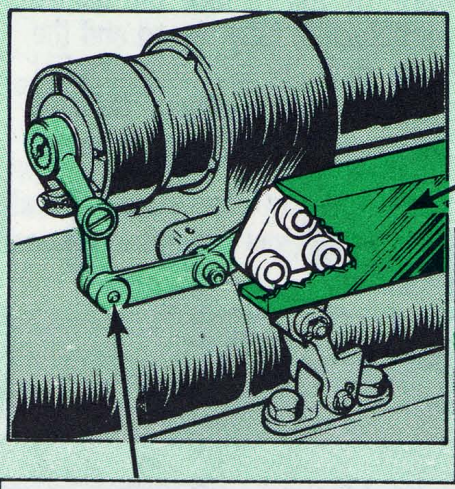
(Since only half of each gear is in use at one time, you have to turn each gear 180 degrees (as needed) to get the least worn sections in use. If the breechblock still doesn't close tight after turning the gears, replace the gears. Always assemble the breechblock and the breech ring exactly as lined-up in Figures 37 and 40 in the -12 TM.)

FIRING LINKAGE ASSEMBLY — Pawl **cracked,** worn, **not alined** with firing plunger, its spring pin **missing, damaged.** Detent plunger **loose, binds,** its housing bent, hardware **loose, missing.** Plunger clevis **cracked, loose,** cradle bracket **busted,** roller **loose;** lanyard **frayed,** its handle cracked, missing. **Wrong lanyard** (FSN 1015-317-2484 gets the right one). S-hook, pulley, roller worn, burred. (Shorten the lanyard to about 6 inches. That way it'll not fly forward and get crushed in the cradle during recoil.

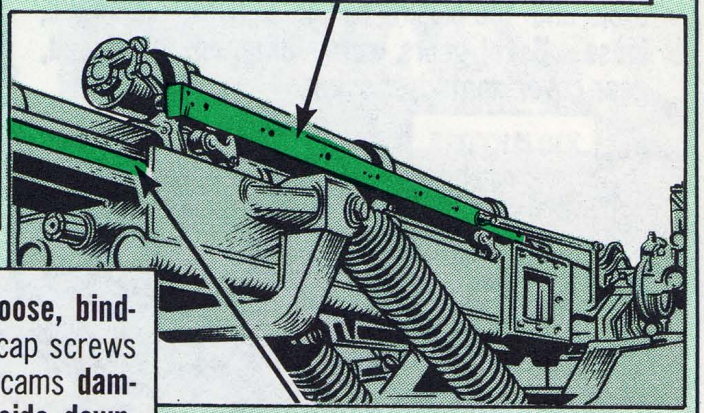


P.S MORE

VARIABLE RECOIL SYSTEM



RAIL AND PLATE ASSEMBLY — Linkage, pivot pins loose, **cracked, bind.** End cover dented, missing. Cam actuating lever, control cam, cam lever tube **cracked,** burred, **worn, wobbly.**

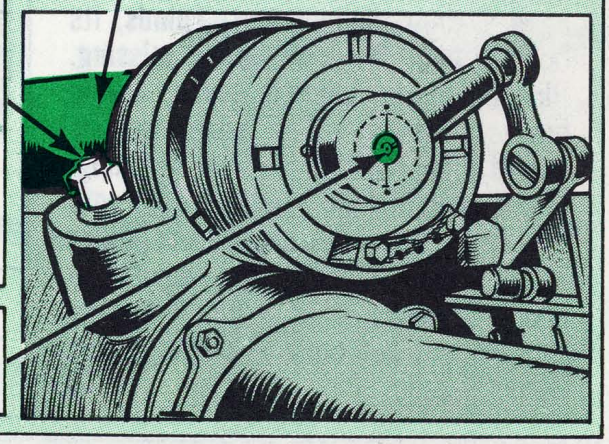


ROLLER AND PIVOT GROUP — **Loose, binding, cracked,** set screw **missing,** cap screws **not safety wired,** needle-bearing cams **damaged,** roller support installed **upside down.** (The needle-bearing cams must fit 1 up and 2 down. If the support is upside down the linkage will strain and the shoulder screws will shear. That'll throw the variable recoil mechanism out of adjustment — and that can damage the recoil mechanism and the carriage. Check bearing cams daily. They must turn freely.)

SLEIGH ASSEMBLY — **Loose, leaky.** Yokes and rails pitted, **cracked.**

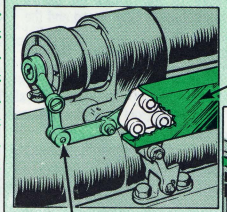
FILLER PLUG — Loose, **leaky, threads stripped;** plug's head rounded or chewed-up. (Use wrench easy-like on the plug. Replace damaged plug. Always protect recoil oil from contamination. Clean real well around the filler plug and wipe off the liquid releasing tool and the oil filler gun when you add or drain oil. Always purge the oil gun (by turning the handle) until no more air bubbles show up at the nozzle. And before tightening the gun nozzle in the fill-hole, turn the handle to force out any air in the hole. See paras 67-68 in the -12 TM.)

RECUPERATOR CYLINDER — Dented, **cracked,** purge plug **leaky** (check around second yoke for leakage). Cover on the air-filling valve **loose, missing, damaged.** (This cover must be in place and tight. Never fire the weapon without it.)

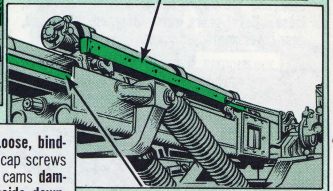


OIL INDEX — Dirty, **stuck, defective, leaky;** oil reserve **low, excessive.**

VARIABLE RECOIL SYSTEM



RAIL AND PLATE ASSEMBLY — Linkage, pivot pins loose, **cracked, bind.** End cover dented, missing. Cam actuating lever, control cam, cam lever tube **cracked,** burred, **worn, wobbly.**

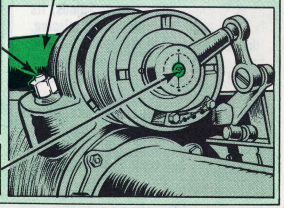


ROLLER AND PIVOT GROUP — **Loose, binding, cracked,** set screw **missing,** cap screws **not safety wired,** needle-bearing cams **damaged,** roller support installed **upside down.** (The needle-bearing cams must fit 1 up and 2 down. If the support is upside down the linkage will strain and the shoulder screws will shear. That'll throw the variable recoil mechanism out of adjustment — and that can damage the recoil mechanism and the carriage. Check bearing cams daily. They must turn freely.)

SLEIGH ASSEMBLY — **Loose, leaky.** Yokes and rails pitted, **cracked.**

FILLER PLUG — Loose, **leaky, threads stripped;** plug's head rounded or chewed-up. (Use wrench easy-like on the plug. Replace damaged plug. Always protect recoil oil from contamination. Clean real well around the filler plug and wipe off the liquid releasing tool and the oil filler gun when you add or drain oil. Always purge the oil gun (by turning the handle) until no more air bubbles show up at the nozzle. And before tightening the gun nozzle in the fill-hole, turn the handle to force out any air in the hole. See paras 67-68 in the -12 TM.)

RECUPERATOR CYLINDER — Dented, **cracked,** purge plug **leaky** (check around second yoke for leakage). Cover on the air-filling valve **loose, missing, damaged.** (This cover must be in place and tight. Never fire the weapon without it.)



OIL INDEX — Dirty, **stuck, defective, leaky;** oil reserve **low, excessive.**

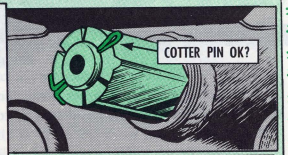
OIL INDEX CHECK

Under normal conditions you read the oil reserve index like so:

OIL INDEX INDICATOR:	SAYS OIL RESERVE IS:
Flush with the face of the control assembly	Normal
Extends 5/32 inch	Minimum (You're safe, but re-establish oil to normal soonest.)
Extends 3/16 inch	Low (Bring it back to normal soonest; with low oil reserve the weapon will fall out of battery.)
Extends all the way out	Zero (establish normal setting soonest — your M102 will fly out of control if you fire with the oil index at zero.)
Receded into cylinder	Excessive (Excess oil reserve will produce extreme shock at end of counter recoil.)

In an emergency, if you have to re-use drained oil be sure to strain it through a piece of linen or some other lint-free cloth.

RECOIL CYLINDER — Piston rod **out of adjustment.** (For correct adjustment: Tighten the outer locking nut so there's no end play, then back it off 1 castellation. If you leave the locking nut too tight you'll wreck the recoil system when the weapon's fired.) Locking nut **loose, cracked,** threads **stripped;** cotter pin **missing, broken.** (Keep close check on the outer locking nut and the cotter pin. If they're damaged or loose the front of the cradle will be busted when the weapon's fired.)

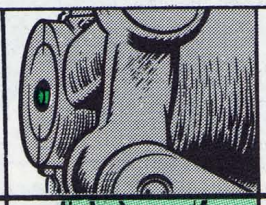
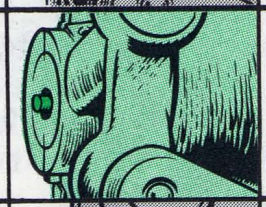
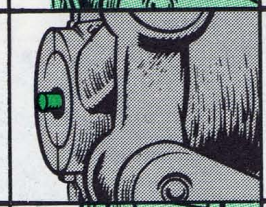
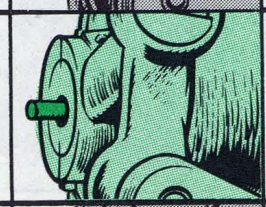
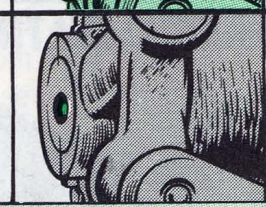


STUFFING BOX AND PURGE PLUG — Stuffing box **leaking.** Packing **worn,** deep scratches on recoil rod. Purge plug **leaking.** Gasket **worn,** plug loose.

PS MORE

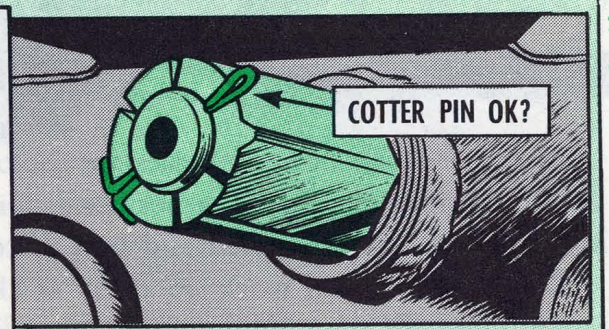
OIL INDEX CHECK

Under normal conditions you read the oil reserve index like so:

OIL INDEX INDICATOR:		SAYS OIL RESERVE IS:
Flush with the face of the control assembly		Normal
Extends 5/32 inch		Minimum (You're safe, but re-establish oil to normal soonest.)
Extends 3/16 inch		Low (Bring it back to normal soonest; with low oil reserve the weapon will fall out of battery.)
Extends all the way out		Zero (establish normal setting soonest — your M102 will fly out of control if you fire with the oil index at zero.)
Receded into cylinder		Excessive (Excess oil reserve will produce extreme shock at end of counter recoil.)

In an emergency, if you have to re-use drained oil be sure to strain it through a piece of linen or some other lint-free cloth.

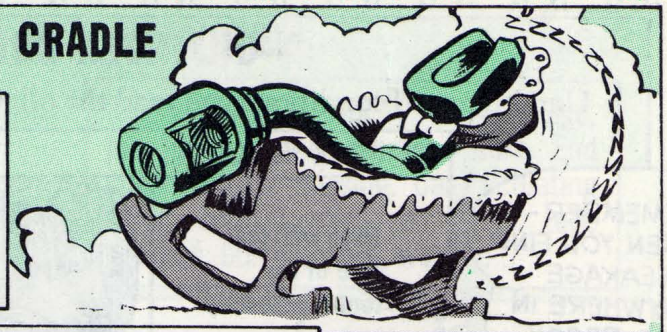
RECOIL CYLINDER — Piston rod **out of adjustment.** (For correct adjustment: Tighten the outer locking nut so there's no end play, then back it off 1 castellation. If you leave the locking nut too tight you'll wreck the recoil system when the weapon's fired.) Locking nut **loose, cracked,** threads **stripped;** cotter pin **missing, broken.** (Keep close check on the outer locking nut and the cotter pin. If they're damaged or loose the front of the cradle will be busted when the weapon's fired.)



STUFFING BOX AND PURGE PLUG — Stuffing box **leaking.** Packing **worn,** deep scratches on recoil rod. Purge plug **leaking.** Gasket **worn,** plug loose.

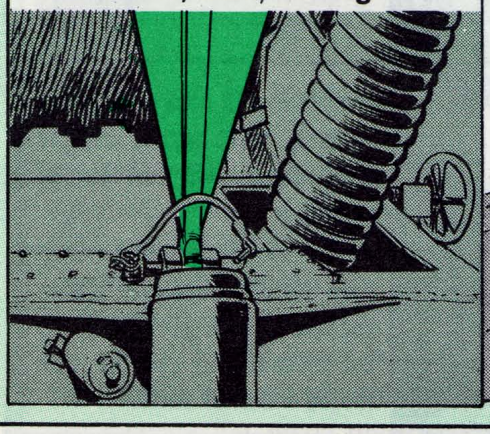
P.S MORE

CRADLE

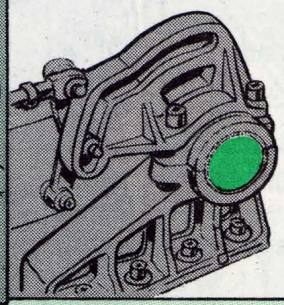


GUN-WAY STRIPPING — **Greasy,** gouged, rivets **loose, sheared.** (Clean sleigh assembly rails after travel. If they stay dirty they'll contaminate the gun-way stripping.)

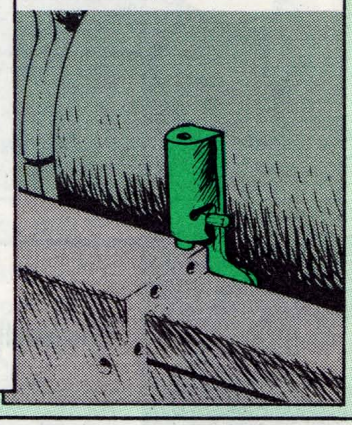
TRAVEL LOCK ASSEMBLY — Loose, out of alinement. Locking pin **missing, broken,** its cable sheared, hardware **busted,** worn, **missing.**



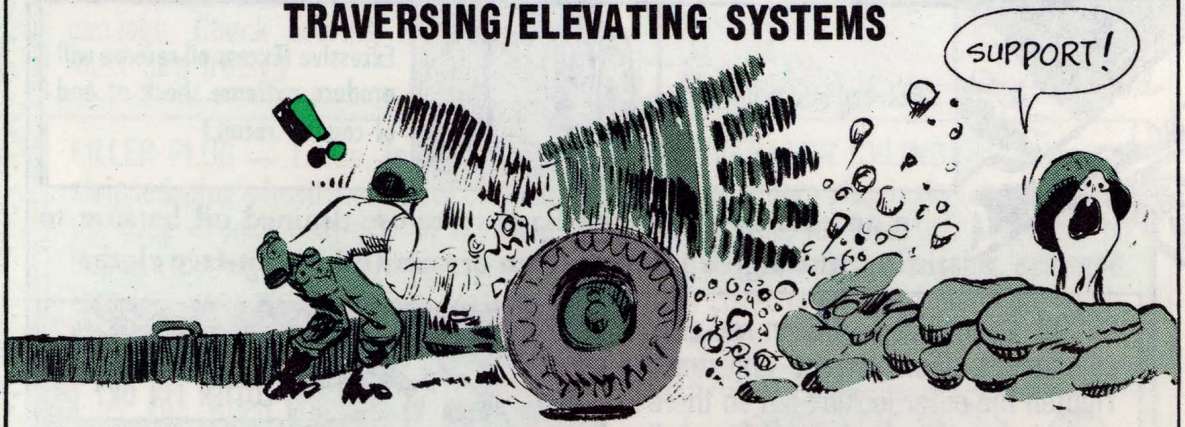
TRUNNIONS — Housing **cracked,** attaching hardware **missing, broken, loose.** Cap screws **not safety wired.**



RECOIL INDICATOR — **Stuck,** worn, screws loose, plunger **damaged, won't mark.**



TRAVERSING/ELEVATING SYSTEMS



Under normal conditions exercise the traversing and elevating systems at least weekly. Under extreme weather conditions do it more often. The work-out will keep the systems well oiled and will discourage corrosion.

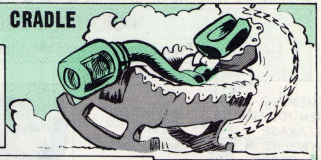
Both systems must work smoothly at all times. Never force the handwheels.

Both sides of the weapon must elevate evenly. If the left side hangs back, stop elevating fast. Lopsided elevating can mean the system's out of adjustment, or it's got serious gear problems.

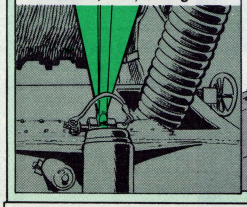
Whatever the case, elevating and traversing system problems are tended to by support.

CRADLE

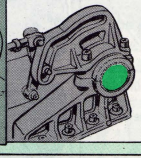
GUN-WAY STRIPPING — **Greasy,** gouged, rivets **loose, sheared.** (Clean sleigh assembly rails after travel. If they stay dirty they'll contaminate the gun-way stripping.)



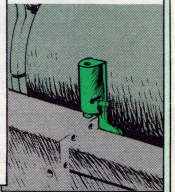
TRAVEL LOCK ASSEMBLY — Loose, out of alinement. Locking pin **missing, broken,** its cable sheared, hardware **busted,** worn, **missing.**



TRUNNIONS — Housing **cracked,** attaching hardware **missing, broken, loose.** Cap screws **not safety wired.**



RECOIL INDICATOR — **Stuck,** worn, screws loose, plunger **damaged, won't mark.**



TRAVERSING/ELEVATING SYSTEMS

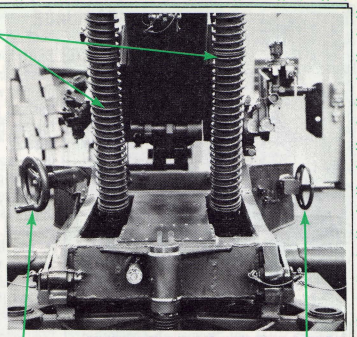
Under normal conditions exercise the traversing and elevating systems at least weekly. Under extreme weather conditions do it more often. The work-out will keep the systems well oiled and will discourage corrosion.

Both systems must work smoothly at all times. Never force the handwheels.

Both sides of the weapon must elevate evenly. If the left side hangs back, stop elevating fast. Lopsided elevating can mean the system's out of adjustment, or it's got serious gear problems.

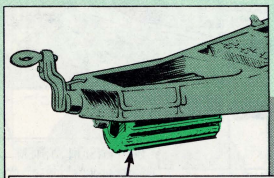
Whatever the case, elevating and traversing system problems are tended to by support.

BALL AND SCREW ASSEMBLIES — **Out of adjustment,** painted, attaching nuts, washers **loose, cracked.** Locking screw **missing, loose;** grease fittings clogged, **missing, damaged.** Equilibrator springs **cracked,** rusty, **loose. Not matched-up.** (The coils in the top section of both equilibrator springs must turn in the same direction — either left or right. Same, natch, for the bottom section of both springs. If the springs are not matched, they'll buckle when you elevate, and the elevating system will be strained. Support installs the springs.)



ELEVATING HANDWHEEL — **Loose,** plastic covering cracked, handle bent, **binding.** (Use GAA on the handle's grease fitting. Handle should turn easy on its spindle.) Lube fitting **sheared,** clogged. Self-locking nut or washer **loose,** worn, **missing.** Handwheel housing **loose,** set screw **missing,** housing cover loose, dented, gasket damaged.

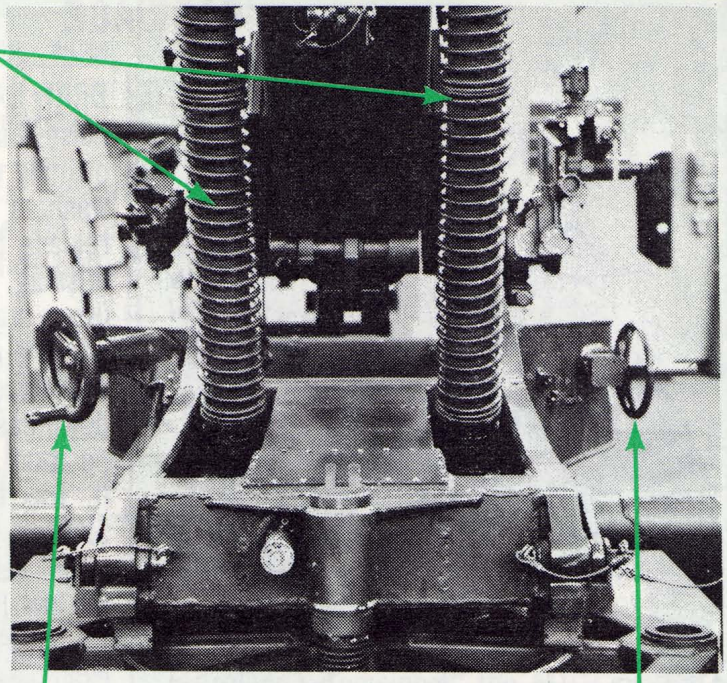
TRAVERSING HANDWHEEL — **Loose,** plastic covering split, self-locking nut, washer **loose, missing, damaged,** handle binds, won't retract. Wheel housing **loose,** housing cover dented, washers, screws **missing,** gasket damaged, missing.



ROLLER TIRE — **Loose, binds,** gouged, split, worn, tread clogged with mud, debris. (Rotate the roller after 15-20 rounds to prevent excessive gear wear from pounding as the weapon's fired. Keep roller on clear, smooth surface, so's you can traverse without straining the traversing gears and drive shafts. If your M102 has the air-filled roller tire, give it 4-5 pounds of air pressure. Newer roller tires are filled with styrofoam or foam rubber.)

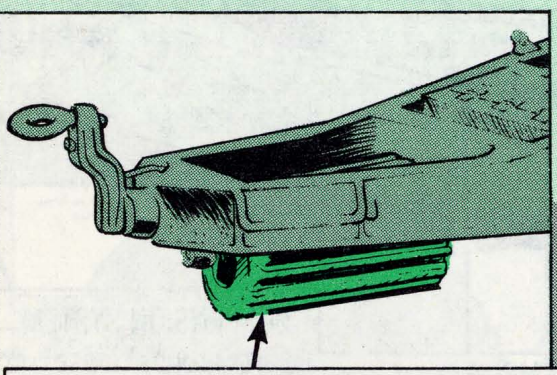
MORE

BALL AND SCREW ASSEMBLIES — **Out of adjustment,** painted, attaching nuts, washers **loose, cracked.** Locking screw **missing, loose;** grease fittings clogged, **missing, damaged.** Equilibrator springs **cracked,** rusty, **loose. Not matched-up.** (The coils in the top section of both equilibrator springs must turn in the same direction — either left or right. Same, natch, for the bottom section of both springs. If the springs are not matched, they'll buckle when you elevate, and the elevating system will be strained. Support installs the springs.)



ELEVATING HANDWHEEL — **Loose,** plastic covering cracked, handle bent, **binding.** (Use GAA on the handle's grease fitting. Handle should turn easy on its spindle.) Lube fitting **sheared,** clogged. Self-locking nut or washer **loose,** worn, **missing.** Handwheel housing **loose,** set screw **missing,** housing cover loose, dented, gasket damaged.

TRAVERSING HANDWHEEL — **Loose,** plastic covering split, self-locking nut, washer **loose, missing, damaged,** handle binds, won't retract. Wheel housing **loose,** housing cover dented, washers, screws **missing,** gasket damaged, missing.



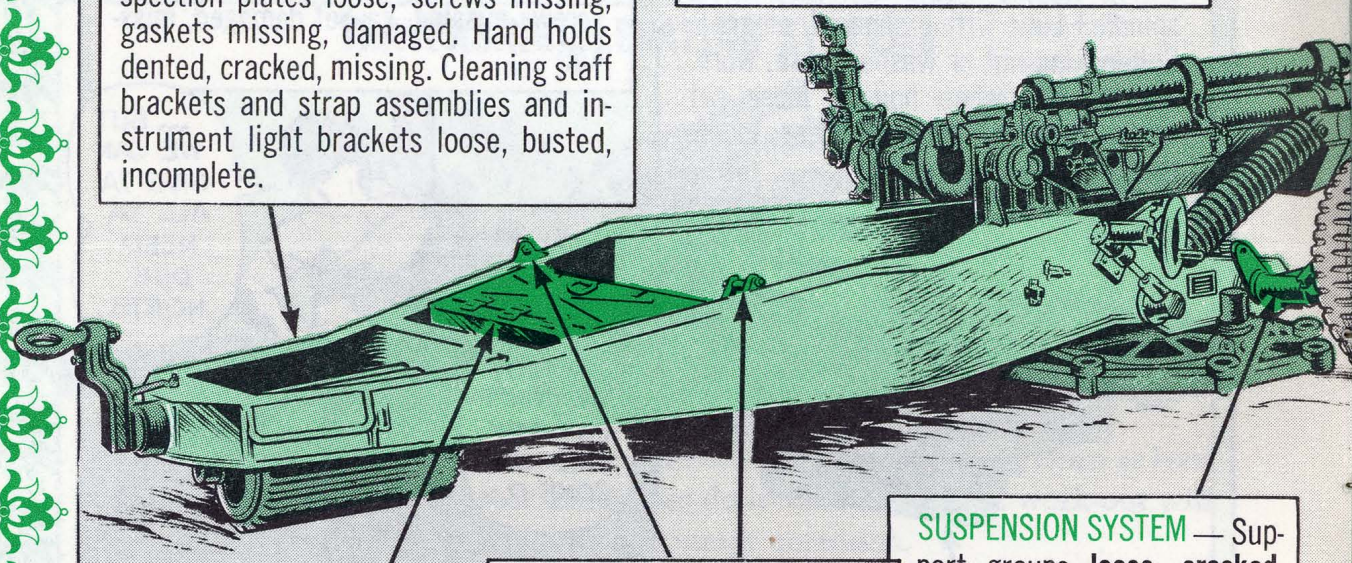
ROLLER TIRE — **Loose, binds,** gouged, split, worn, tread clogged with mud, debris. (Rotate the roller after 15-20 rounds to prevent excessive gear wear from pounding as the weapon's fired. Keep roller on clear, smooth surface, so's you can traverse without straining the traversing gears and drive shafts. If your M102 has the air-filled roller tire, give it 4-5 pounds of air pressure. Newer roller tires are filled with styrofoam or foam rubber.)

PS MORE

CARRIAGE

DRAW BAR — Bracket **cracked, twisted, loose;** lunette **sheared, cracked,** loose, bushing worn, cotter pins, slotted nuts, washers **missing, busted,** loose. Quick-release pin **stuck,** gunky, ball bearing **missing,** its cable assembly damaged. (Keep draw bar up when firing. If it digs into the ground the bar will be wrecked when the weapon's fired. Put the bar down easy when you shift the weapon's position . . . you'll distort it if you drop it. Tow the weapon with a 3/4-ton or 5/4-ton vehicle. The pintles on most other vehicles are either too high or too low. If you must tow with some other vehicle — like a 1/4-ton vehicle, for example — drive real e-a-s-y all the way. If the vehicle has a movable pintle, set the lunette locking plate so the lunette can't turn. If the vehicle has a fixed pintle, set the lunette locking plate so the lunette can turn.)

BOX TRAILS — Welding **cracked,** trails **cracked** (especially in the rear section). Traversing gear and shaft housing inspection plates loose, screws missing, gaskets missing, damaged. Hand holds dented, cracked, missing. Cleaning staff brackets and strap assemblies and instrument light brackets loose, busted, incomplete.



TOOL BOX — Cover warped, hinges, locking latches, handle broken, missing, floppy. Drain plugs clogged. OVE **missing, damaged;** box loaded with unrelated gear and junk.

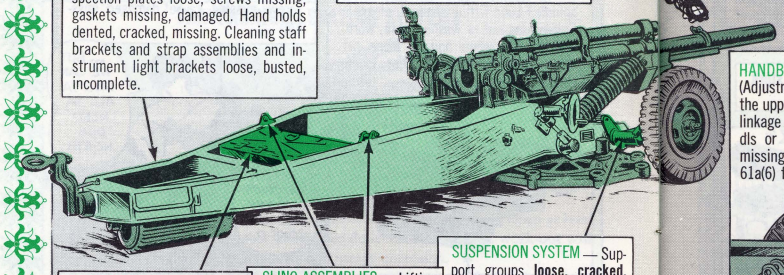
SLING ASSEMBLIES — Lifting brackets **cracked,** worn, **loose;** holding hardware **missing, loose, busted.** Locking pins **busted,** their cables cut, hardware **missing.**

SUSPENSION SYSTEM — Support groups **loose, cracked,** worn. Locking pins **bent, cracked, lost,** their cables cut, keys **broken, lost.** Pin storing brackets loose, dented, clogged. Wheel spindles **bent,** worn.

CARRIAGE

DRAW BAR — Bracket **cracked, twisted, loose;** lunette **sheared, cracked,** loose, bushing worn, cotter pins, slotted nuts, washers **missing, busted,** loose. Quick-release pin **stuck,** gunky, ball bearing **missing,** its cable assembly damaged. (Keep draw bar up when firing. If it digs into the ground the bar will be wrecked when the weapon's fired. Put the bar down easy when you shift the weapon's position . . . you'll distort it if you drop it. Tow the weapon with a 3/4-ton or 5/4-ton vehicle. The pintles on most other vehicles are either too high or too low. If you must tow with some other vehicle — like a 1/4-ton vehicle, for example — drive real e-a-s-y all the way. If the vehicle has a movable pintle, set the lunette locking plate so the lunette can't turn. If the vehicle has a fixed pintle, set the lunette locking plate so the lunette can turn.)

BOX TRAILS — Welding **cracked,** trails **cracked** (especially in the rear section). Traversing gear and shaft housing inspection plates loose, screws missing, gaskets missing, damaged. Hand holds dented, cracked, missing. Cleaning staff brackets and strap assemblies and instrument light brackets loose, busted, incomplete.

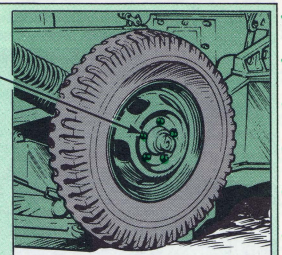


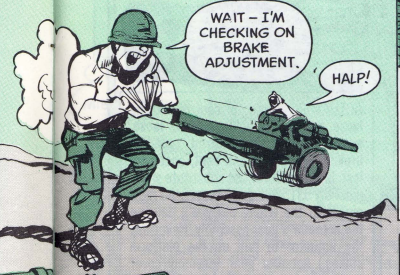
TOOL BOX — Cover warped, hinges, locking latches, handle broken, missing, floppy. Drain plugs clogged. OVE **missing, damaged;** box loaded with unrelated gear and junk.

SLING ASSEMBLIES — Lifting brackets **cracked,** worn, **loose;** holding hardware **missing, loose, busted.** Locking pins **busted,** their cables cut, hardware **missing.**

SUSPENSION SYSTEM — Support groups **loose, cracked,** worn. Locking pins **bent, cracked, lost,** their cables cut, keys **broken, lost.** Pin storing brackets loose, dented, clogged. Wheel spindles **bent,** worn.

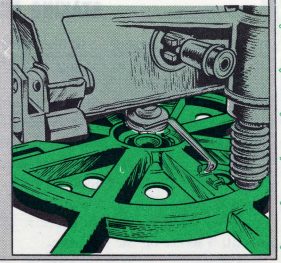
WHEELS — Stud nuts **missing,** worn, loose (Tighten 'em to 50-55 lbs-ft). Wheel bearings out of adjustment, **damaged,** need **grease.** Grease seals installed wrong (lip on seal must face toward bearing). (See para 61 in the **TM** for wheel bearing care.) Brake bands worn, greasy.



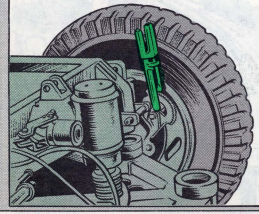


TIRES — **Cut,** cracked, worn, valve stems pinched, squashed; valve caps missing. Air pressure low (40 PSI for road travel and 20 for cross-country rolling.) Remember, the M102's maximum speed on hard roads is 35 MPH. Keep it under 10 MPH on cross-country tours.

FIRING PLATFORM — Platform **cracked, distorted;** locking plate and locking handle **bent, cracked.** Handle locking pin and cotter pin **lost, busted.** Locking handle bracket **smashed,** loose. Ball socket gunky. Trail-assembly pivot **worn, loose.** (No grease, please, on ball socket, pivot or lock.)

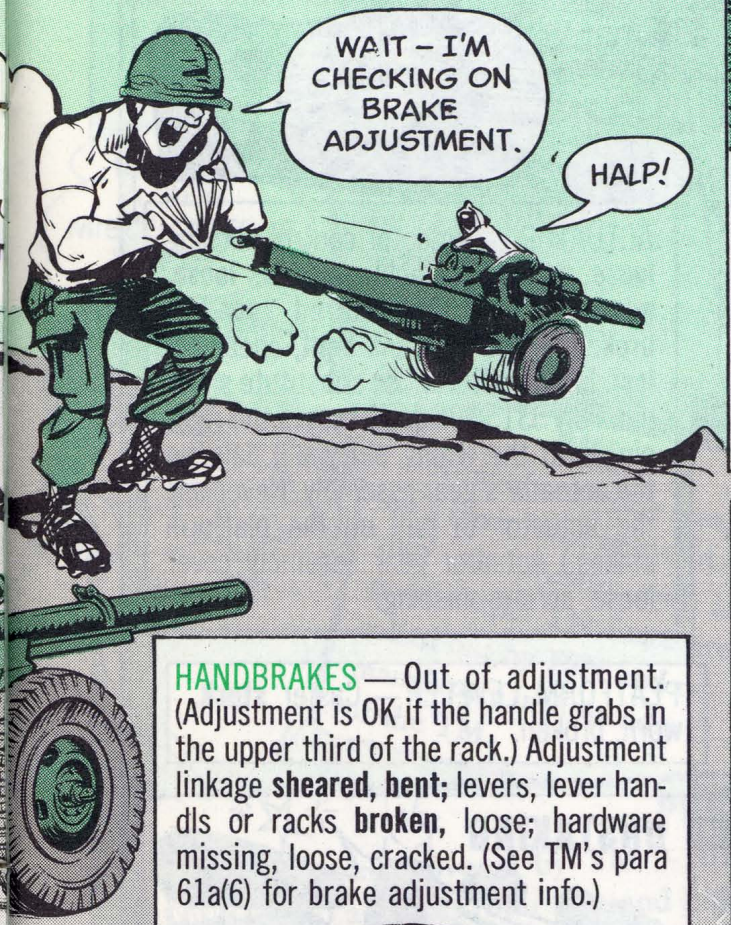


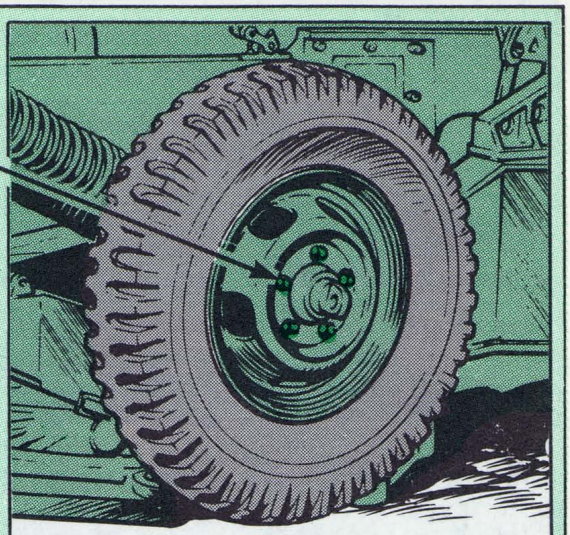
HANDBRAKES — Out of adjustment. (Adjustment is OK if the handle grabs in the upper third of the rack.) Adjustment linkage **sheared, bent;** levers, lever handls or racks **broken,** loose; hardware missing, loose, cracked. (See TM's para 61a(6) for brake adjustment info.)



MORE

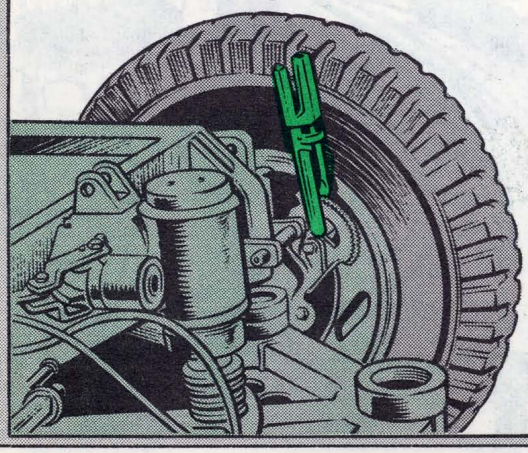
WHEELS — Stud nuts **missing,** worn, loose (Tighten 'em to 50-55 lbs-ft). Wheel bearings out of adjustment, **damaged,** need **grease.** Grease seals installed wrong (lip on seal must face toward bearing). (See para 61 in the TM for wheel bearing care.) Brake bands worn, greasy.



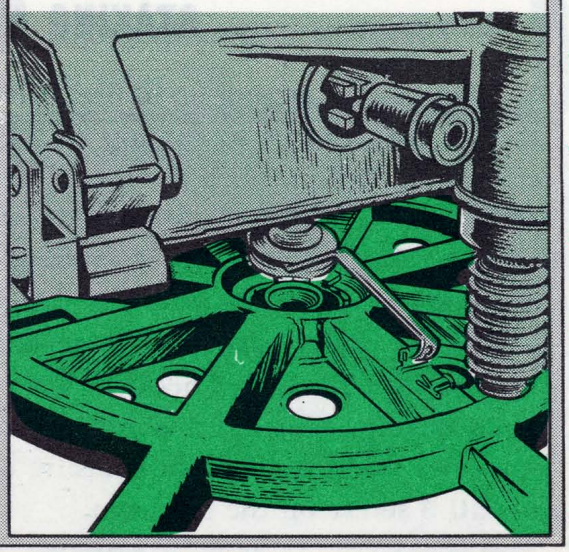


TIRES — **Cut,** cracked, worn, valve stems pinched, squashed; valve caps missing. Air pressure low (40 PSI for road travel and 20 for cross-country rolling.) Remember, the M102's maximum speed on hard roads is 35 MPH. Keep it under 10 MPH on cross-country tours.

HANDBRAKES — Out of adjustment. (Adjustment is OK if the handle grabs in the upper third of the rack.) Adjustment linkage **sheared, bent;** levers, lever handls or racks **broken,** loose; hardware missing, loose, cracked. (See TM's para 61a(6) for brake adjustment info.)

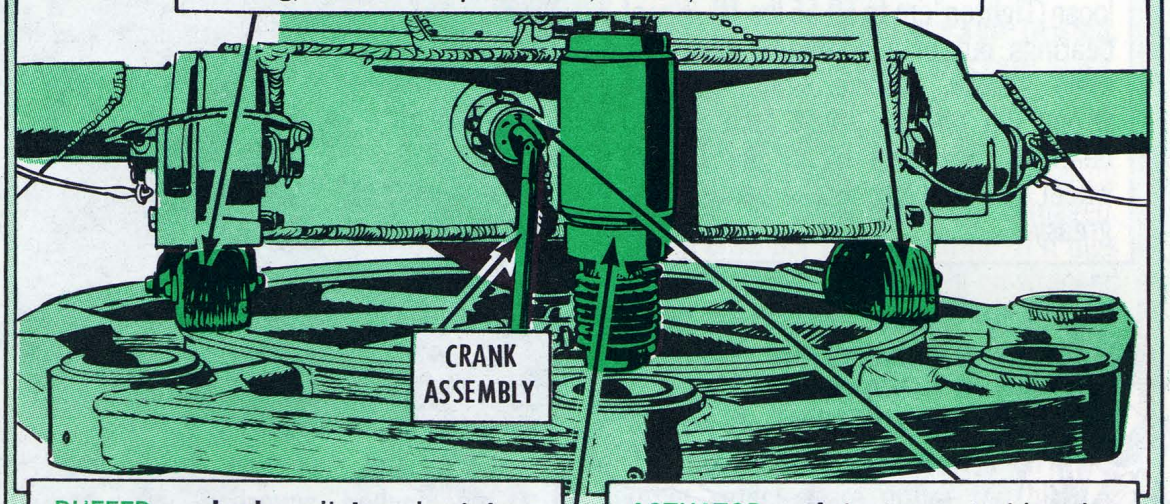


FIRING PLATFORM — Platform **cracked, distorted;** locking plate and locking handle **bent, cracked.** Handle locking pin and cotter pin **lost, busted.** Locking handle bracket **smashed,** loose. Ball socket gunky. Trail-assembly pivot **worn, loose.** (No grease, please, on ball socket, pivot or lock.)



P.S MORE

SUPPORT-BODY ASSEMBLIES — **Loose,** lube fittings plugged, missing, **sheared.** Wipers loose, nicked, **lost.**



BUFFER — **Leaky,** oil **low,** boot **torn,** worn, boot clamp cracked, loose, **missing.** Breather plugs **clogged,** loose. (See support if buffer leaks.)

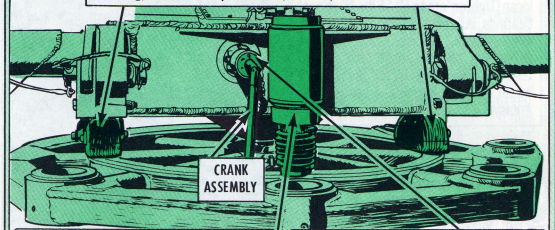
ACTUATOR — Actuator control housing **loose, cracked,** attaching screws **loose, missing.** Crank shaft burred, **rounded, broken.** Actuator crank **bent,** shear pin **lost, broken.** (Never use substitute shear pin. FSN 5315-999-1573 covers the right pin. With the wrong pin you'll damage the actuator's gear assembly. Never use the actuator to pull up the platform stakes.) Actuator gear assembly cover loose, screws missing.

PLATFORM LEVELER — Caster **stuck,** worn, broken.

STAKING AND UNSTAKING

When you're setting up to fire, drive the platform stakes so the top ring of each stake is flush with the top of the stake hole on the platform. Always traverse the weapon to give yourself enough working room with the sledge hammer or you'll crash into the weapon and wreck it for sure. Check the stakes often during a firing mission to make sure they don't work loose. Be sure to use all 8 stakes on the platform.

SUPPORT-BODY ASSEMBLIES — **Loose,** lube fittings plugged, missing, **sheared.** Wipers loose, nicked, **lost.**



BUFFER — **Leaky,** oil **low,** boot **torn,** worn, boot clamp cracked, loose, **missing.** Breather plugs **clogged,** loose. (See support if buffer leaks.)

ACTUATOR — Actuator control housing **loose, cracked,** attaching screws **loose, missing.** Crank shaft burred, **rounded, broken.** Actuator crank **bent,** shear pin **lost, broken.** (Never use substitute shear pin. FSN 5315-999-1573 covers the right pin. With the wrong pin you'll damage the actuator's gear assembly. Never use the actuator to pull up the platform stakes.) Actuator gear assembly cover loose, screws missing.

PLATFORM LEVELER — Caster **stuck,** worn, broken.

STAGING AND UNSTAKING

When you're setting up to fire, drive the platform stakes so the top ring of each stake is flush with the top of the stake hole on the platform. Always traverse the weapon to give yourself enough working room with the sledge hammer or you'll crash into the weapon and wreck it for sure. Check the stakes often during a firing mission to make sure they don't work loose. Be sure to use all 8 stakes on the platform.

To unstake the platform, punch the stakes down so the top of each stake is even with the top of the platform. If the platform hangs on a stake, pry the platform up with the carriage staff. See para 22 in the TM for the scoop on pulling up stakes and preparing the firing platform for travel. Loosen the stakes and remove them.

Always clean around the locking pin area on the supports to make sure the wheels will rotate to the locked position. Safety Note: Keep on-lookers away until the suspension assembly is locked in the travel position. Same goes when you're lowering the platform.

LUBE NOTE

The support types do a lot of the major lubing chores on your M102. See Notes 2, 3 and 4 in the LO . . . and, make sure your howitzer gets lubed on time.

LIGHTS

Check blackout, tail and stop lights. Keep 'em clean and in good order.

BIIL

How about your weapon's basic issue items? Are they all present and in good shape? The items are called out by FSN and nomenclature in Appendix II of the TM.

DATA PLATES

Keep all name plates, caution plates, instruction plates, etc., on the weapon clean and make sure they stay attached. Coat metal plates with oil to keep 'em from rusting. Remember, the carriage serial number on the M102 is used as the end-item serial number.

PUBS

The weapon's covered by TM 9-1015-2?4-12 (Mar 65), its companion LO (Oct 66) and ESC (Mar 69), and FM 6-70 (Mar 70).

FIRE CONTROL, SIGHT GEAR

Handle the M102's fire control and sighting equipment gently. Never bang it or jerk it. Never force, fiddle with, or disassemble knobs, locks, latches, levels, optics, screws, covers, doors, springs, housings, etc.

Keep the equipment clean and dry and cover it or store it when it's not in use. Cover it when traveling.

Purge and charge fire control equipment as needed. TM 750-116 (Aug 67) provides the purging and charging SOP. See SC 4931-95-CL-J54 (Jun 68) for info on the charging and purging kit.

PS MORE

To unstake the platform, punch the stakes down so the top of each stake is even with the top of the platform. If the platform hangs on a stake, pry the platform up with the carriage staff. See para 22 in the TM for the scoop on pulling up stakes and preparing the firing platform for travel. Loosen the stakes and remove them.

Always clean around the locking pin area on the supports to make sure the wheels will rotate to the locked position. Safety Note: Keep on-lookers away until the suspension assembly is locked in the travel position. Same goes when you're lowering the platform.

LUBE NOTE

The support types do a lot of the major lubing chores on your M102. See Notes 2, 3 and 4 in the LO . . . and, make sure your howitzer gets lubed on time.

LIGHTS

Check blackout, tail and stop lights. Keep 'em clean and in good order.

DATA PLATES

Keep all name plates, caution plates, instruction plates, etc., on the weapon clean and make sure they stay attached. Coat metal plates with oil to keep 'em from rusting. Remember, the carriage serial number on the M102 is used as the end-item serial number.

BIIL

How about your weapon's basic issue items? Are they all present and in good shape? The items are called out by FSN and nomenclature in Appendix II of the TM.

PUBS

The weapon's covered by TM 9-1015-2?4-12 (Mar 65), its companion LO (Oct 66) and ESC (Mar 69), and FM 6-70 (Mar 70).

FIRE CONTROL, SIGHT GEAR

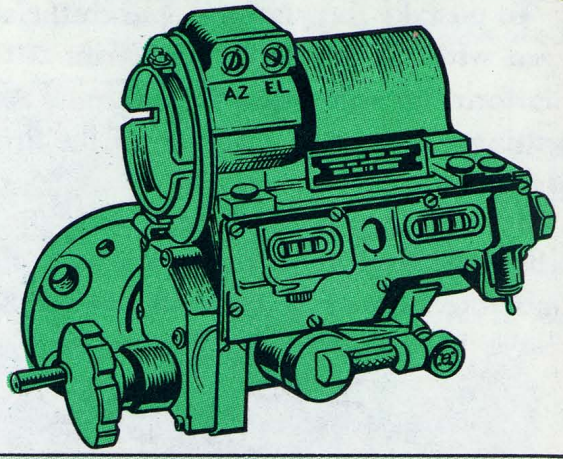
Handle the M102's fire control and sighting equipment gently. Never bang it or jerk it. Never force, fiddle with, or disassemble knobs, locks, latches, levels, optics, screws, covers, doors, springs, housings, etc.

Keep the equipment clean and dry and cover it or store it when it's not in use. Cover it when traveling.

Purge and charge fire control equipment as needed. TM 750-116 (Aug 67) provides the purging and charging SOP. See SC 4931-95-CL-J54 (Jun 68) for info on the charging and purging kit.

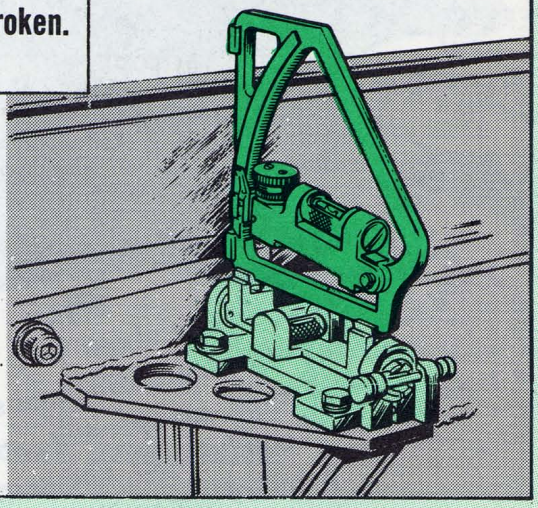
P.S. MORE

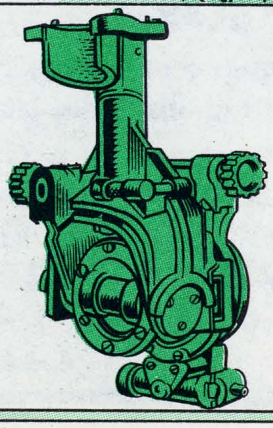
FIRE CONTROL QUADRANT M14 — Carriage support bracket **loose, cracked,** its hardware missing, damaged. Quadrant mounting bracket **cracked, loose.** Quadrant windows **broken,** knobs **loose, binding, broken, missing.** Elevating and adjusting screws **damaged;** cant correction lamp **burned out, missing;** leveling vials **broken, not legible,** vial covers missing, damaged. Off-On light toggle switch **sheared, stuck.** Telescope clamp **cracked.**



M1A1 QUADRANT — **Cracked, bent,** vial **broken.** Scale **not legible,** knob **binds, loose.**

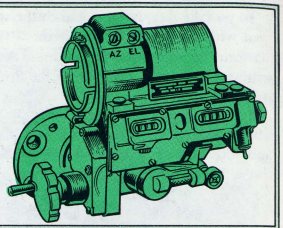
CANT CORRECTOR — Support bracket loose, **cracked;** vial **broken, not legible.** Leveling plates **burred, painted.** (Never remove the cant corrector from the weapon. You'll mess up the shims and then you'll be in real trouble. In fact, if you just loosen the cant corrector you can change its alinement with the cradle trunnions. Then your reading with the gunner's quadrant will be fouled up.





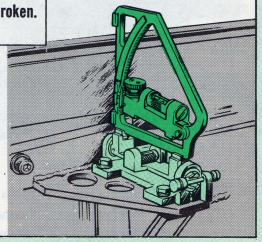
M134 TELESCOPE MOUNT — Carriage support **loose, cracked.** Mount bracket **cracked, loose.** Mount knobs **loose, bind, broken, missing.** Leveling vials **broken, not legible.** Mirror **missing, damaged.** Telescope bracket **cracked,** its locating pin **damaged.** Plunger **damaged,** housing cover cracked, missing. Screws on mount housing, plates, brackets loose, **Missing.** Screws **not safety wired.**

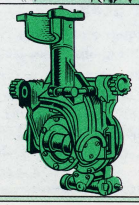
FIRE CONTROL QUADRANT M14 — Carriage support bracket **loose, cracked,** its hardware missing, damaged. Quadrant mounting bracket **cracked, loose.** Quadrant windows **broken,** knobs **loose, binding, broken, missing.** Elevating and adjusting screws **damaged;** cant correction lamp **burned out, missing;** leveling vials **broken, not legible,** vial covers missing, damaged. Off-On light toggle switch **sheared, stuck.** Telescope clamp **cracked.**



M1A1 QUADRANT — **Cracked, bent,** vial **broken.** Scale **not legible,** knob **binds, loose.**

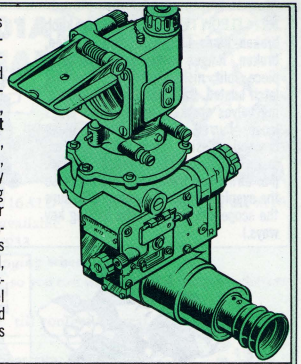
CANT CORRECTOR — Support bracket loose, **cracked;** vial **broken, not legible.** Leveling plates **burred, painted.** (Never remove the cant corrector from the weapon. You'll mess up the shims and then you'll be in real trouble. In fact, if you just loosen the cant corrector you can change its alinement with the cradle trunnions. Then your reading with the gunner's quadrant will be fouled up.





M134 TELESCOPE MOUNT — Carriage support **loose, cracked.** Mount bracket **cracked, loose.** Mount knobs **loose, bind, broken, missing.** Leveling vials **broken, not legible.** Mirror **missing, damaged.** Telescope bracket **cracked,** its locating pin **damaged.** Plunger **damaged,** housing cover cracked, missing. Screws on mount housing, plates, brackets loose, **Missing.** Screws **not safety wired.**

M113 PANORAMIC TELESCOPE — Lens **cracked, broken,** scratched, **loose, infected with fungus.** The elevation, azimuth, reset, direct-and-indirect, and gunner's aid knobs **bind, loose, backlash.** Azimuth knob handle **broken,** direct-and-indirect knobs **clicks not audible.** Windows **cracked,** scratched, **broken,** their covers, latches, springs, locks **broken,** weak. Elbow assembly binds, elbow lock **sheared,** its spring weak, elbow lock-holes cruddy. Rubber eyepiece split, **fungus infected, missing.** Caps on purge and charging valves cracked, **missing;** and plugs burred, loose. Caps on light plugs cracked, missing, their chains busted, lost. (For travel and airlift release the lock plunger and rotate eyepiece 80 degrees, so it's parallel with the weapon's tube.)

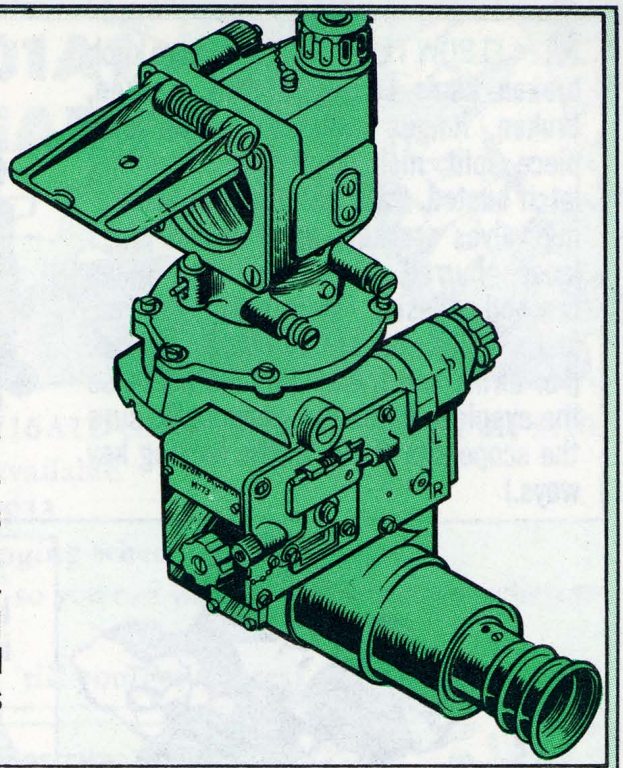


M1 COLLIMATOR — Its body **dented, cracked;** screws missing, cell assembly **loose.** Rear and front sights, leveling assembly and lamp housing **loose, parts missing, damaged.** Optics scratched, **cracked, loose, fungus** or **moisture** inside. Reticle **not legible.** Check yoke for **cracked,** loose, **missing** clamping knobs and screws. Tripod wobbly, its legs, stakes bent, **cracked, broken.** Base plate cracked. Collimator cover dented, cracked, its latches, strap, handle busted, missing, rubber pad ring missing, split, gummy, closing rubber seal unglued, split, edge of cover peeling.

M9 POWER SOURCE ASSEMBLY — Box damaged, **won't lock.** Battery compartment cover, catch, handles and electrical plug **damaged.** Batteries **missing, dead.** Remote control rheostat **cracked, loose,** leads **cut, pulled,** lead connectors **loose, damaged.** Junction box cracked, leads **cut, pulled,** plug **damaged.** (Roll up leads carefully and pack all components in the M9's storage box.)

P&S MORE

M113 PANORAMIC TELESCOPE — Lens **cracked, broken,** scratched, **loose, infected with fungus.** The elevation, azimuth, reset, direct-and-indirect, and gunner's aid knobs **bind, loose, backlash.** Azimuth knob handle **broken,** direct-and-indirect knobs **clicks not audible.** Windows **cracked,** scratched, **broken,** their covers, latches, springs, locks **broken,** weak. Elbow assembly binds, elbow lock **sheared,** its spring weak, elbow lock-holes cruddy. Rubber eyepiece split, **fungus infected, missing.** Caps on purge and charging valves cracked, **missing;** and plugs burred, loose. Caps on light plugs cracked, missing, their chains busted, lost. (For travel and airlift release the lock plunger and rotate eyepiece 80 degrees, so it's parallel with the weapon's tube.)

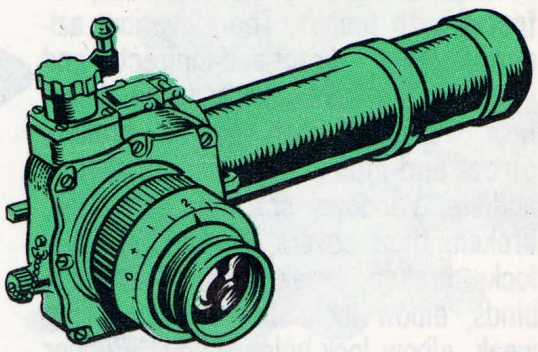


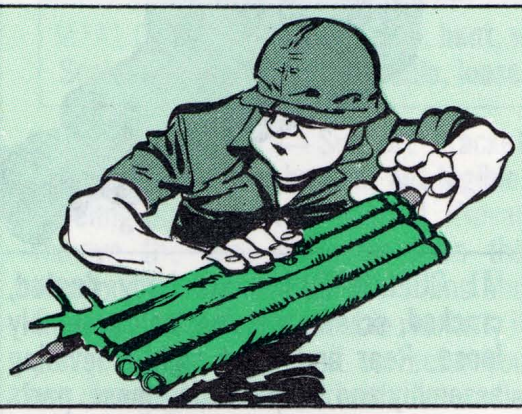
M1 COLLIMATOR — Its body **dented, cracked;** screws missing, cell assembly **loose.** Rear and front sights, leveling assembly and lamp housing **loose, parts missing, damaged.** Optics scratched, **cracked, loose, fungus** or **moisture** inside. Reticle **not legible.** Check yoke for **cracked,** loose, **missing** clamping knobs and screws. Tripod wobbly, its legs, stakes bent, **cracked, broken.** Base plate cracked. Collimator cover dented, cracked, its latches, strap, handle busted, missing, rubber pad ring missing, split, gummy, closing rubber seal unglued, split, edge of cover peeling.

M9 POWER SOURCE ASSEMBLY — Box damaged, **won't lock.** Battery compartment cover, catch, handles and electrical plug **damaged.** Batteries **missing, dead.** Remote control rheostat **cracked, loose,** leads **cut, pulled,** lead connectors **loose, damaged.** Junction box cracked, leads **cut, pulled,** plug **damaged.** (Roll up leads carefully and pack all components in the M9's storage box.)

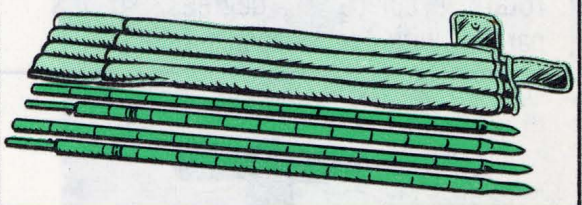
PS MORE

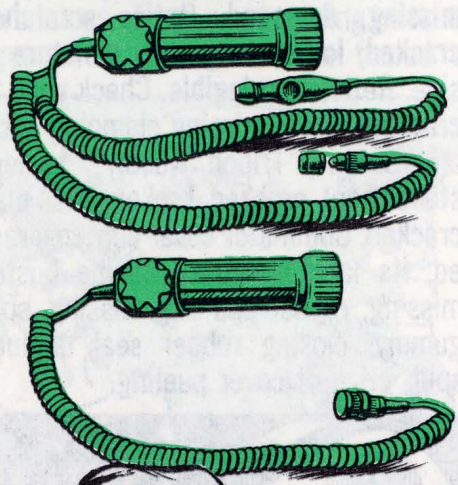
M114 ELBOW TELESCOPE — Range knob **broken, binds.** Lens scratched, **cracked, broken, fungus infected.** Rubber eyepiece split, nicked, **missing.** Mounting latch **busted.** Caps on purge and charging valves **cracked, missing** and plugs loose, burred. Caps on light plugs cracked, missing, their chains busted, lost. Cell assembly **cracked, dented.** (For airlift and travel turn the M114 so the eyepiece faces the weapon. Be sure the scope sits firmly in the locking key ways.)



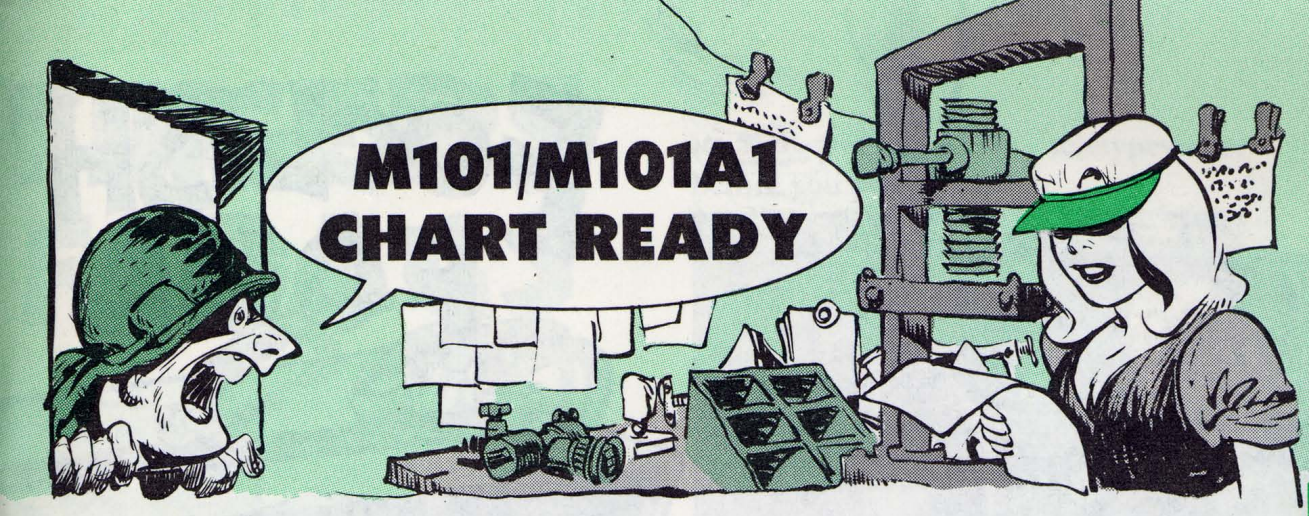


AIMING POSTS M1A2 — **Cracked,** markings **worn,** spikes **broken;** cover missing, ripped, rotted.





M52E1 AND M53E1 INSTRUMENT LIGHTS — Light's cases **cracked,** caps **broken, lost.** (FSN 1290-015-8543 covers a good cap for both lights.) Cables **cracked, pulled;** rheostats **damaged;** lamp caps missing, cracked, lamps **burned,** connectors **damaged.** Packing case busted, latches, handle missing, broken. (Never yank instrument lights from case. The cables are screwed to the dummy receptacle in the case, and you'll bust the cable.) Batteries weak, dead, missing. (Keep batteries out of lights when they're not in use.)



A range correction chart for the M16A1D elbow telescope used on the M101 or M101A1 towed howitzer is now available.

Ask for it under FSN 1240-351-2933.

You need this chart for correct ranging when using direct fire.

The chart has an adhesive backing so you can stick it on the weapon wherever it is handiest for you.

Here's a drawing that you can use 'till you get the real thing.

RANGE CORRECTION CHART
Howitzer M101, M101A1 w/Telescope M16A1D
Cannon 105MM Howitzer M2A1, M2A2

Using Reticle 7673922 Range Line	Corresponding Range (Meters) Using Cartridge HE-MI, CH7	Corresponding Range (Meters) Using Cartridge HEP-T-M327
N	0	0
200	290	390
400	560	730
600	840	1030
800	1100	1310
1000	1370	1570
1200	1630	1810
		Part No. 10559721

COMMANDO WHEEL

When you need a wheel for your Commando (XM706 or XM706E1) Armored Car, use FSN 2530-934-2360, as called out in the Revised Support List (Aug 69), put out by the U.S. Army Tank-Automotive Command. The FSN in TM 9-2320-245-20P (May 69) is a goof. The good FSN is in the AMDF.

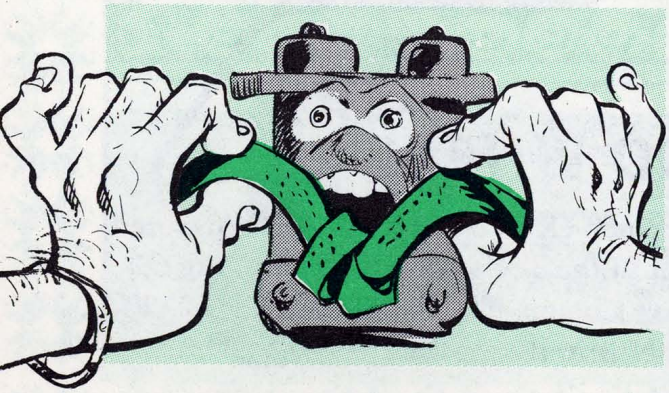
FOOLISH FOUL

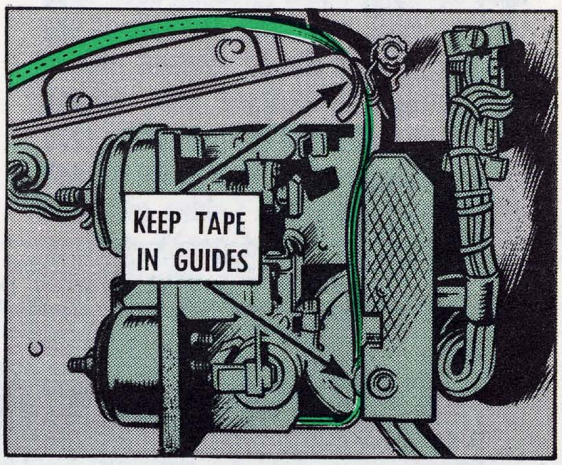
It may sound ridiculous but complicated lookin' M18 gun direction computer (FADAC) suffers its worst maintenance problems with the simplest parts of the system . . . like tape handling, cable inspection and generator care.

Here are some examples:

TAPE IT EASY

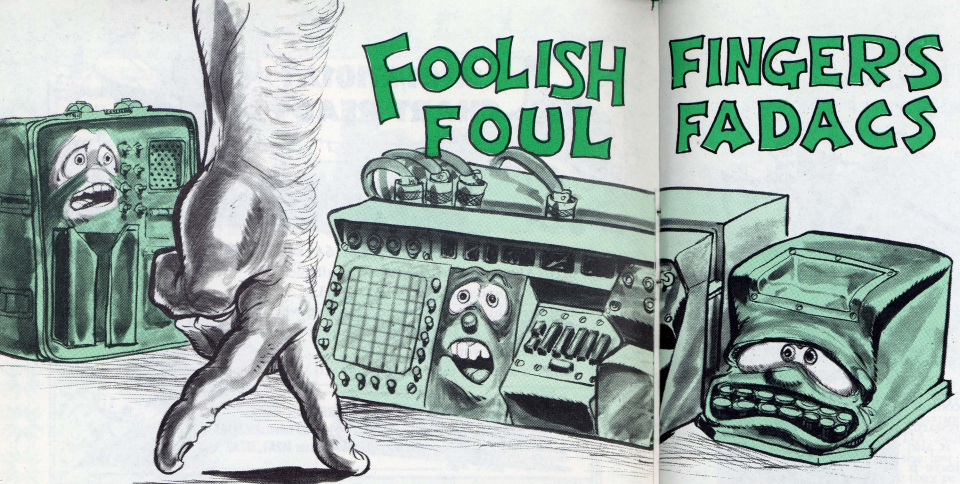
Fickle fingers can foul your memory tapes in 2 easy ways. First, letting the tape slip out of the guides as you thread it into the read head of the AN/GSQ-64 SDR (signal data reproducer) will tear up the edges.





Second, careless handling of the tape cartridge may let the fan-folded program tapes spill out like a roll of unwinding film. And any kinks this causes

FOOLISH FOUL FINGERS FADACS

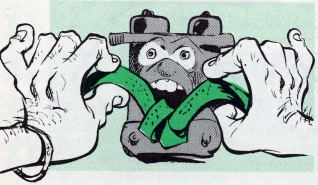


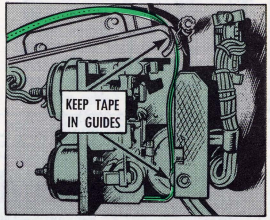
It may sound ridiculous but complicated lookin' M18 gun direction computer (FADAC) suffers its worst maintenance problems with the simplest parts of the system . . . like tape handling, cable inspection and generator care.

Here are some examples:

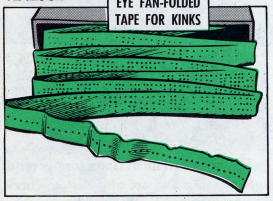
TAPE IT EASY

Fickle fingers can foul your memory tapes in 2 easy ways. First, letting the tape slip out of the guides as you thread it into the read head of the AN/GSQ-64 SDR (signal data reproducer) will tear up the edges.



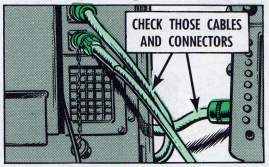


Second, careless handling of the tape cartridge may let the fan-folded program tapes spill out like a roll of unwinding film. And any kinks this causes will make tape feeding problems for the read head. This causes wear and tear on the SDR.



HOW ARE YOUR CONNECTIONS?

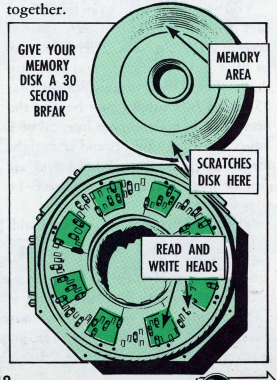
Frayed cables and loose connectors are easy enough to spot. All it takes is a fast sweep of the eyeballs up and down the cables connecting your FADAC to its SDR and TT-537/G teletypewriter before you power up.



GIVE IT 30

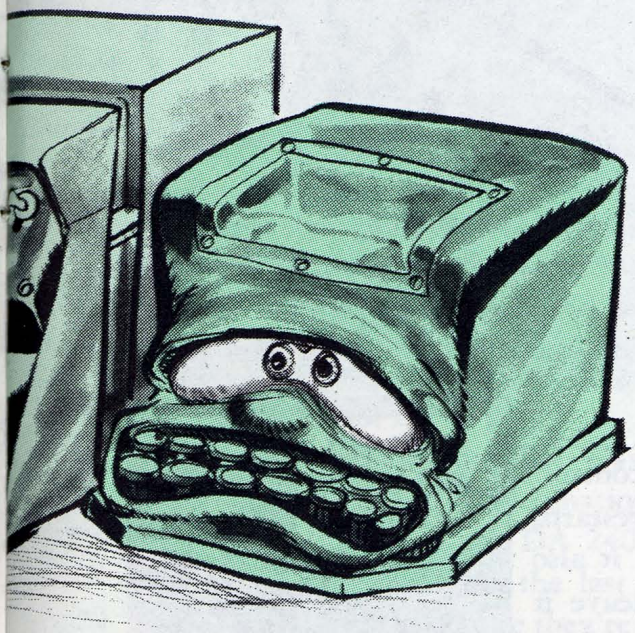
There's really no excuse to power down and then back up real quick. But if you do get caught in one of these off-on quickie operations, please remember this:

The memory disk inside that FADAC needs at least 30 seconds to run down and stabilize itself before you crank it again. Otherwise it may wobble against the read-write heads. And every bump against these heads means strips of memory erased at each point they scrape together.

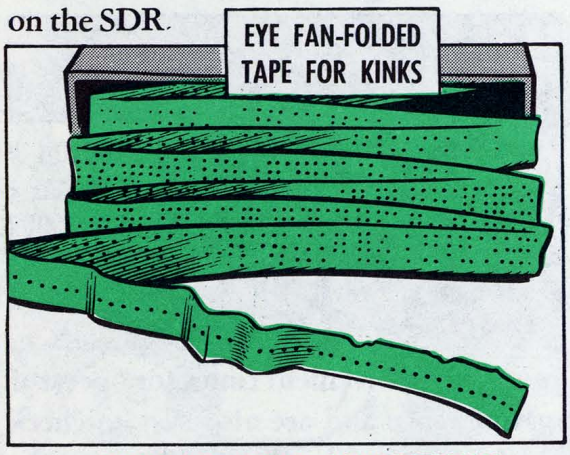


MORE

FINGERS FADACS

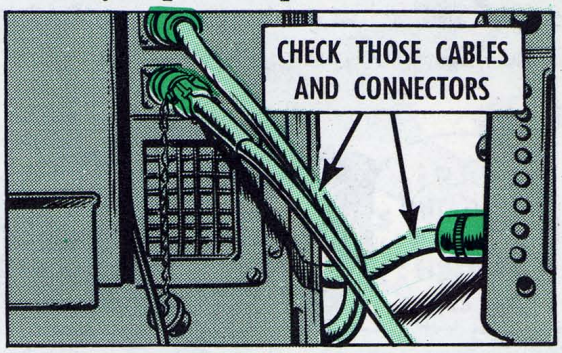


will make tape feeding problems for the read head. This causes wear and tear on the SDR.



HOW ARE YOUR CONNECTIONS?

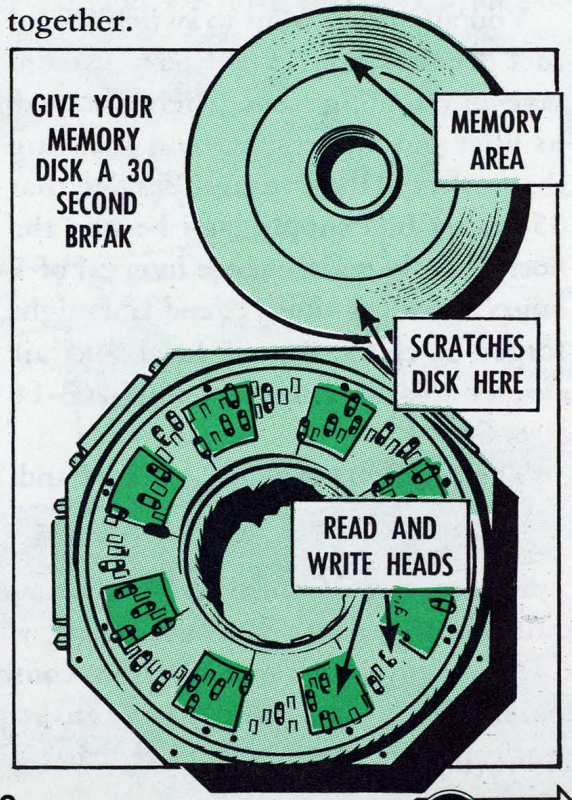
Frayed cables and loose connectors are easy enough to spot. All it takes is a fast sweep of the eyeballs up and down the cables connecting your FADAC to its SDR and TT-537/G teletypewriter before you power up.



GIVE IT 30

There's really no excuse to power down and then back up real quick. But if you do get caught in one of these off-on quickie operations, please remember this:

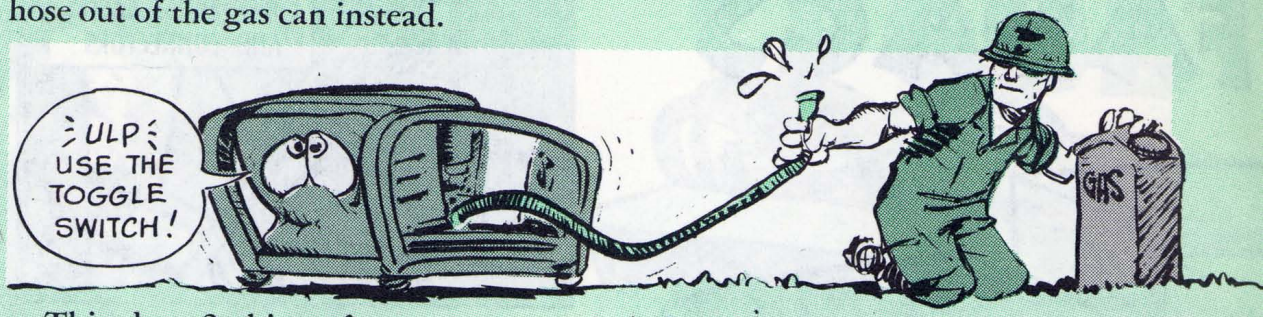
The memory disk inside that FADAC needs at least 30 seconds to run down and stabilize itself before you crank it again. Otherwise it may wobble against the read-write heads. And every bump against these heads means strips of memory erased at each point they scrape together.



P.S. MORE

SWITCH IT OFF

Some fast operators seem to forget there's an ON-OFF toggle switch for those 3-KW generators that power the FADAC. So they cut the juice by yanking the hose out of the gas can instead.

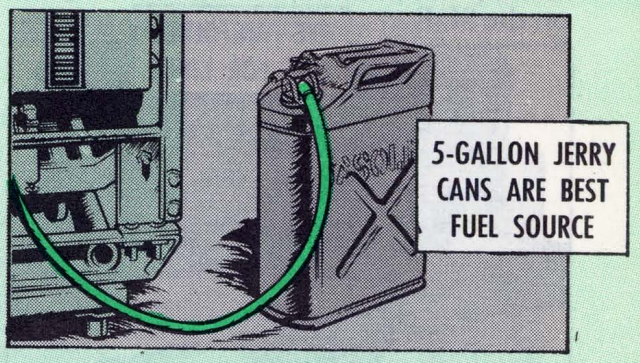


This does 2 things for your generator—both bad. First, it doesn't get the chance to run for 5 minutes before shut down so it can cool off.

Second, this practice burns out all the gas inside the carburetor and sucks gas line residue into the carburetor jets. The combination of blocked jets and air-filled lines sure doesn't help you to reprime the generator when you try to restart it . . . which usually takes forever.

Tampering with the fuel-air mixture control is another good way to complicate your restarts. If this control needs constant adjusting, it also needs to go back to support. So just leave it alone—OK?

You also don't want to switch 55-gal fuel drums for the 5-gal jerry cans to save on refueling stops. There's no way to filter out the residue and moisture that collect in these drums. Besides, that 55-gallon fuel supply lasts beyond the normal daily maintenance interval of 5 hours operating time . . . and you might forget to check the oil level and air cleaner according to LO 5-2805-203-14 (Dec 64).



The 5-gallon cans, on the other hand, run out at convenient times for operator maintenance and are also easy to check for fuel contamination.

IT'S NOT COMPLICATED

Taking care of your FADAC actually boils down to doing the regularly required maintenance you find on all your other equipment. The fact this has a computer inside the gun direction control makes no difference to organizational maintenance. It's not the complicated computer, it's the simple things you forget that tunes out the system. Keep that in mind.

USE EFC ONLY

Dear Half-Mast,

When TM 9-1000-202-35 (Nov 69) calls for gun tube condemnation on just the Equivalent Full Charge rounds, can a pullover gage reading increase the "estimated remaining life" as implied in para 4-6c(2)(g) 3 in TM 38-750?

Maj R. G. C.

Dear Major R. G. C.,

Not if you value your life—as well as the life of the tube. When TM 9-1000-202-35 calls for condemnation by EFC rounds **only**, no measurement recorded in column f of the DA 2408-4 can extend it.

In such cases, disregard the last 2 sentences in para 4-6c(2)(g)3. Go by EFC rounds **only**, but make sure they're correct.

Update your TM 38-750 by deleting those 2 sentences from para 4-6c(2)(g)3 as authorized by DA Msg 231416Z, May 70, and DA Msg 032103Z, Jun 70.

Table 8. Estimated Remaining Round Life of Cannon Tube Based on EFC Round Count on 175-mm Gun Cannon M113 and M113E1 For: GUN, SELF-PROPELLED: M107

Tube model	EFC round life of tube	EFC factor	Breech life
M113	*400	Zone 3 = 1.00 Zone 1-2 = 0.25	Serial No. 1 through 337 - original and 2 tubes Serial No. 338 and above - original and 8 tubes

8 *Maximun of 300 zone 3 rounds may be fired prior to condemnation but in no event will more than 400 EFC rounds be fired through this tube.

Half-Mast

When is a half-inch of pretty ordinary steel worth $150?

When it's the piece somebody hacksawed off the clutch-adjusting rod on a 2-1/2 ton truck!

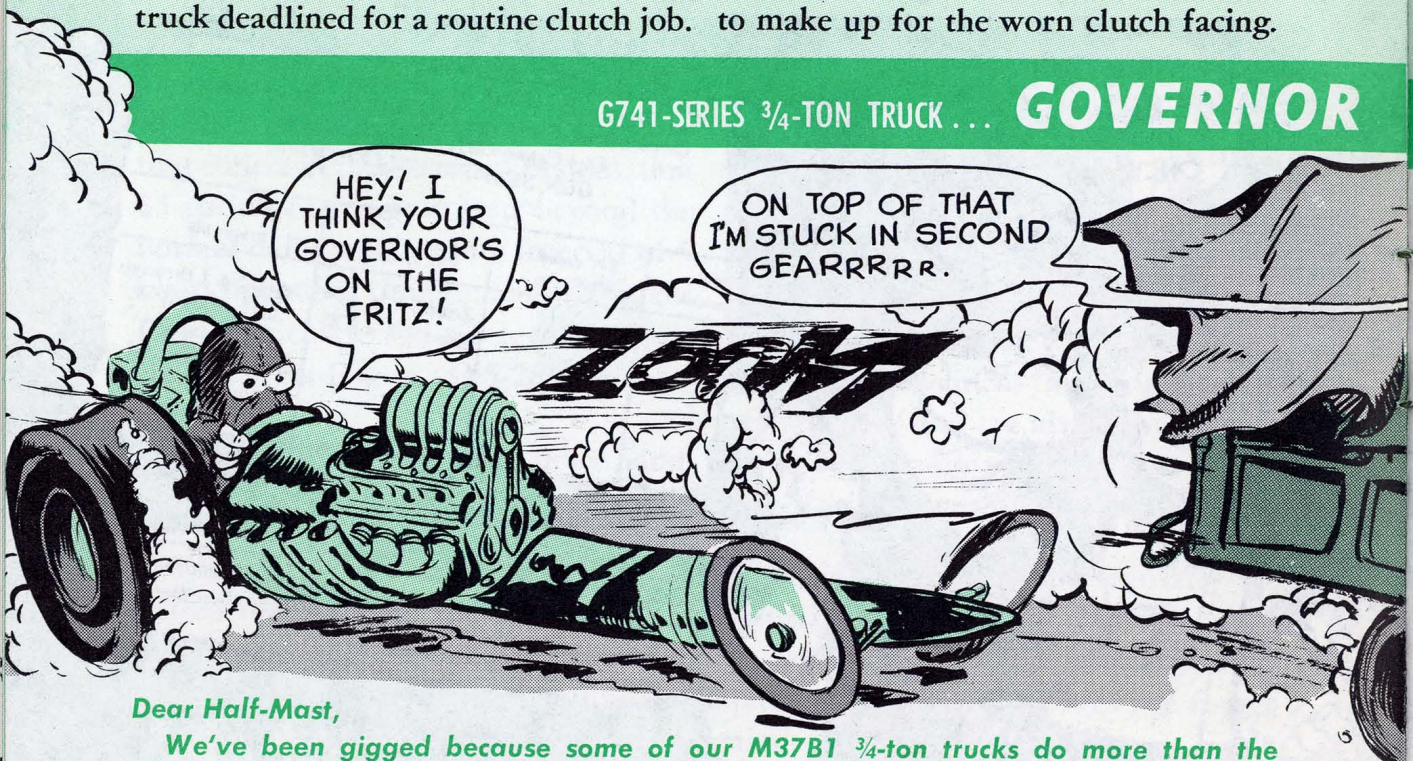
This "somebody" either doesn't know any better or he doesn't want his truck deadlined for a routine clutch job.

Here's the painful story:

He checks his clutch pedal free travel and finds it's less than 1-1/2 inches.

This means his clutch needs adjusting to make up for the worn clutch facing.

G741-SERIES ¾-TON TRUCK . . . GOVERNOR



Dear Half-Mast,

We've been gigged because some of our M37B1 ¾-ton trucks do more than the

When is a half-inch of pretty ordinary steel worth $150?

When it's the piece somebody hacksawed off the clutch-adjusting rod on a 2-1/2 ton truck!

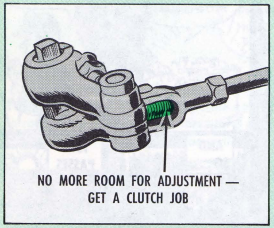
This "somebody" either doesn't know any better or he doesn't want his truck deadlined for a routine clutch job.

Here's the painful story:

He checks his clutch pedal free travel and finds it's less than 1-1/2 inches.

This means his clutch needs adjusting to make up for the worn clutch facing.

But when he slides under his truck, he finds the clutch adjusting rod won't adjust anymore. The end of the adjusting rod is already up against the clutch



throwout shaft lever. This means the clutch facing is almost gone — **and it's time for a refaced clutch disk.**

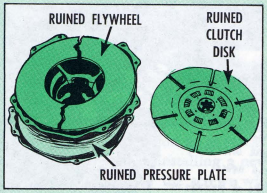
But this "somebody" hauls out a hacksaw and **shortens** his adjusting rod so he can get that clutch pedal free travel back where it's supposed to be.

Then his truck goes back out on the road — with **practically no clutch facing left** between the clutch disk and flywheel.

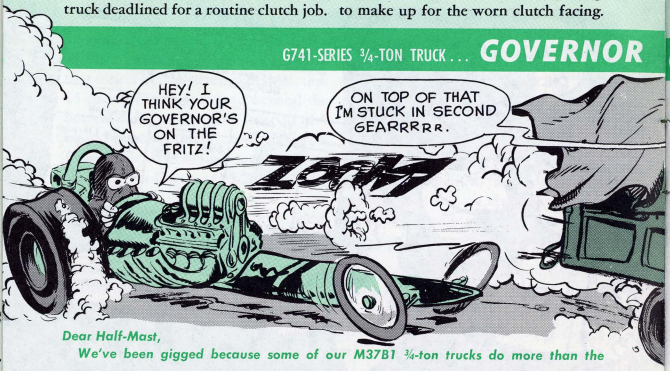
Pretty soon the clutch facing's gone and the bare metal of the clutch disk is running against the bare metal of the flywheel. The heat's terrific. Even before the flywheel cracks from the heat, the damage has been done.

Now his truck goes back into the shop — but not for the routine clutch job it needed before. This time the truck gets a **new** clutch disk, a **new** pressure plate and a **new** flywheel.

Cost? That's right — just about $150 on the nose!



G741-SERIES ¾-TON TRUCK . . . GOVERNOR GUILTY?



18-MPH-in-second-gear specified on page 19 in TM 9-8030. Inspectors say this shows the governor is set too high. The governor is factory-set at 3,400 RPM (page 193 of the TM), and this should limit the speed to 18 MPH in second gear.

So where does that leave us?

CW2 C. E. F.

Dear Mr. C. E. F.,

For sure, that leaves you with something wrong — but not necessarily the governor. Maybe your speedometer is lying. Or maybe they're both off.

Since somebody may have tampered with the governor and set it higher, you should have it adjusted. The proper maximum setting is 3,400 RPM, plus or minus 100 RPM, not the 3,000 to 3,200 RPM given in TM 9-1826A (Dec 52), the carburetor TM. Your support will adjust it for you.

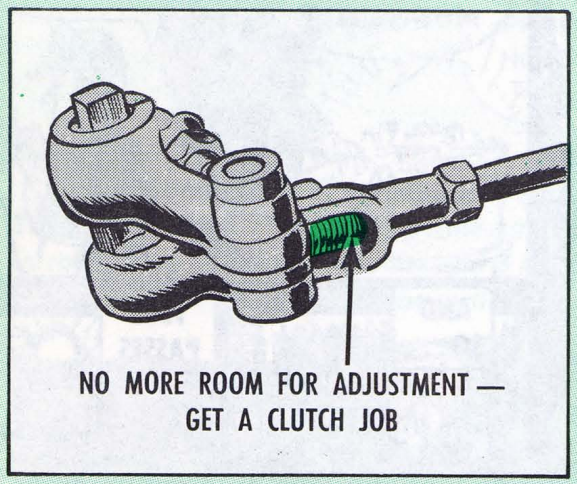
Then, if your 3/4-ton still shows more than 18 MPH in second gear, you can bet your speedometer is on the fritz. So you put in a new speedometer.

Half-Mast

Dear Half-Mast,

We've been gigged because some of our M37B1 ¾-ton trucks do more than the

But when he slides under his truck, he finds the clutch adjusting rod won't adjust anymore. The end of the adjusting rod is already up against the clutch



NO MORE ROOM FOR ADJUSTMENT — GET A CLUTCH JOB

throwout shaft lever. This means the clutch facing is almost gone — **and it's time for a refaced clutch disk.**

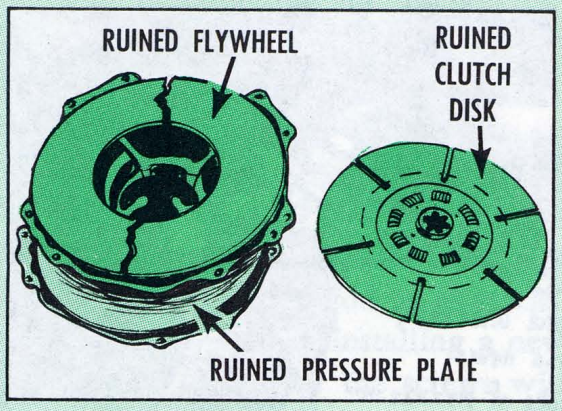
But this "somebody" hauls out a hacksaw and **shortens** his adjusting rod so he can get that clutch pedal free travel back where it's supposed to be.

Then his truck goes back out on the road — with **practically no clutch facing left** between the clutch disk and flywheel.

Pretty soon the clutch facing's gone and the bare metal of the clutch disk is running against the bare metal of the flywheel. The heat's terrific. Even before the flywheel cracks from the heat, the damage has been done.

Now his truck goes back into the shop — but not for the routine clutch job it needed before. This time the truck gets a **new** clutch disk, a **new** pressure plate and a **new** flywheel.

Cost? That's right — just about $150 on the nose!



GUILTY?

18-MPH-in-second-gear specified on page 19 in TM 9-8030. Inspectors say this shows the governor is set too high. The governor is factory-set at 3,400 RPM (page 193 of the TM), and this should limit the speed to 18 MPH in second gear.

So where does that leave us?

CW2 C. E. F.

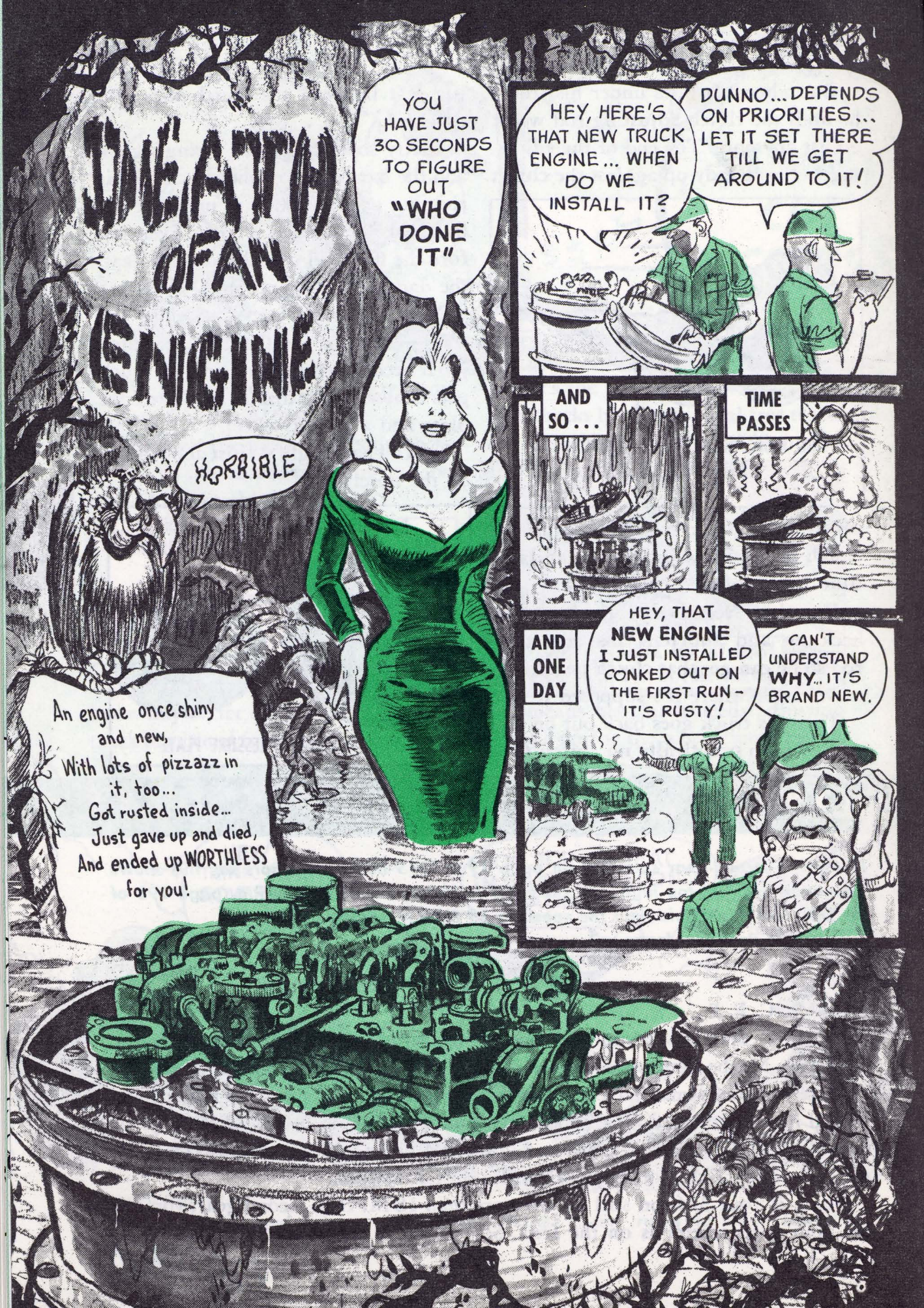
Dear Mr. C. E. F.,

For sure, that leaves you with something wrong — but not necessarily the governor. Maybe your speedometer is lying. Or maybe they're both off.

Since somebody may have tampered with the governor and set it higher, you should have it adjusted. The proper maximum setting is 3,400 RPM, plus or minus 100 RPM, not the 3,000 to 3,200 RPM given in TM 9-1826A (Dec 52), the carburetor TM. Your support will adjust it for you.

Then, if your 3/4-ton still shows more than 18 MPH in second gear, you can bet your speedometer is on the fritz. So you put in a new speedometer.

Half-Mast


DEATH OF AN ENGINE
YOU HAVE JUST 30 SECONDS TO FIGURE OUT "WHO DONE IT"
HORRIBLE
An engine once shiny and new, With lots of pizzazz in it, too... Got rusted inside... Just gave up and died, And ended up WORTHLESS for you!
HEY, HERE'S THAT NEW TRUCK ENGINE... WHEN DO WE INSTALL IT?
DUNNO... DEPENDS ON PRIORITIES... LET IT SET THERE TILL WE GET AROUND TO IT!
AND SO...
TIME PASSES
AND ONE DAY
HEY, THAT NEW ENGINE I JUST INSTALLED CONKED OUT ON THE FIRST RUN - IT'S RUSTY!
CAN'T UNDERSTAND WHY... IT'S BRAND NEW.

M151-SERIES 1/4-TON TRUCK...

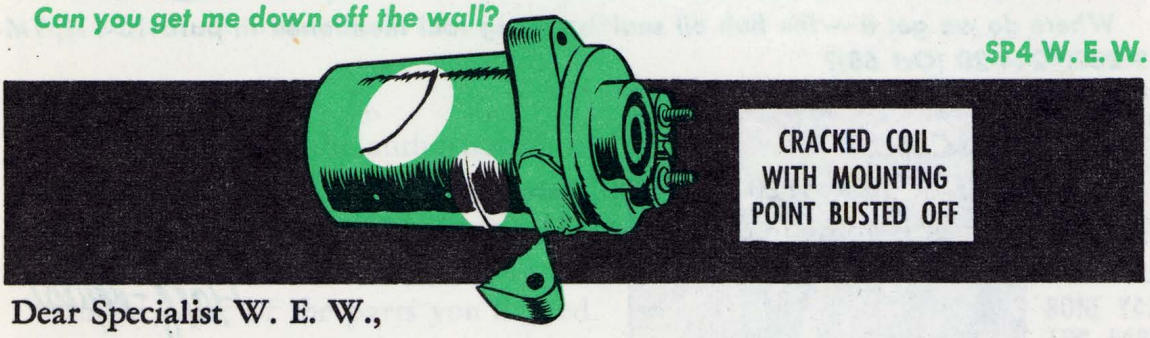
SPOILED COIL?

Dear Half-Mast,

I'm climbing the wall trying to keep distributor coils in our M151A1 ¼-ton trucks. They crack at the 2 mounting points and in a straight line from top to bottom. One truck, in racking up only 96 miles, has had 5 coils!

Can you get me down off the wall?

SP4 W. E. W.



Dear Specialist W. E. W.,

Not entirely. The engineer types are working on this problem—and they expect to have a tougher coil pretty soon.

Meanwhile, keep a close eye on those mounting screws—check at least once a week to see if they're still snug. Loose screws and vibration add up to cracks.

But hold back the muscle on those mounting screws—when installing a new coil and when tightening loose screws. Too much torque on the screws will crack your coil, too. If you can locate a torque screwdriver, give those screws just 15 lb-in torque (that's inches, not feet).

Half-Mast

GRAY'S OK

Dear Half-Mast,

There's strange-looking grease in our new M151-series 1/4-ton vehicles (M151A2, etc.). It's a charcoal color and shows up when regular lubing forces it out around seals. Is this stuff supposed to be purged from the lube points?

SP5 L. E. J.

Dear Specialist L. E. J.,

That gray grease is OK. It's special for break-in of various parts—U-joints and such. Just lube as usual—when the new grease has forced out whatever dirt's in the old grease, quit.

Half-Mast

G890-SERIES 1 1/4-TON TRUCK...

SPECIAL TOOL

Dear Half-Mast,

Where do we get it—the hub oil seal replacing tool mentioned in para 13-11f, TM 9-2320-244-20 (Oct 68)?

CW3 D. C. H.

Dear Mr. D. C. H.,

You order by FSN 5120-795-0700, listed in Fed Cat C5120-IL-A (Jul 70).

This replacer is going in the special tools section of the -20 TM for your 5/4-ton vehicle.

Half-Mast

WOULD YOU BELIEVE...?

You'd never believe it, but it happened. . . .

This quarter-ton kept wheezing, smoking and sputtering . . . and finally died with its boots on.

An autopsy was performed, and the "docs" discovered that the oil bath air cleaner was so filled with sediment that it was choking off the air. Not only that, it had only a little oil atop the dirt in the bowl.

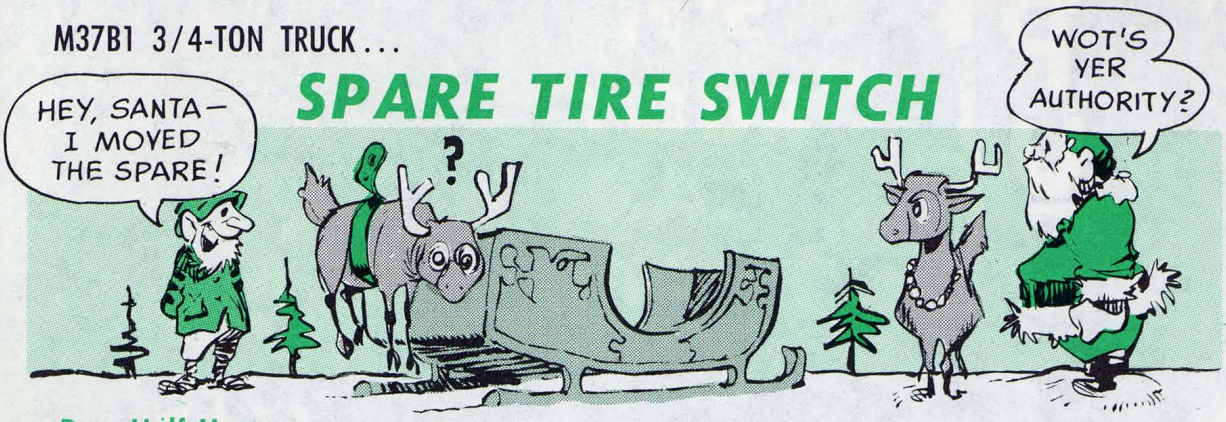
And, what's worse, that air cleaner had not been cleaned for so long that the sediment had become solid . . . like a rock. It dropped out in a big chunk when the bowl was turned upside down!

Have you cleaned your air cleaner lately?

How about doing it by the TM . . . or oftener?

M37B1 3/4-TON TRUCK...

SPARE TIRE SWITCH



Dear Half-Mast,

What's the authority for moving the spare tire from the left door of the M37B1 3/4-ton cargo truck to the rear in the cargo bed?

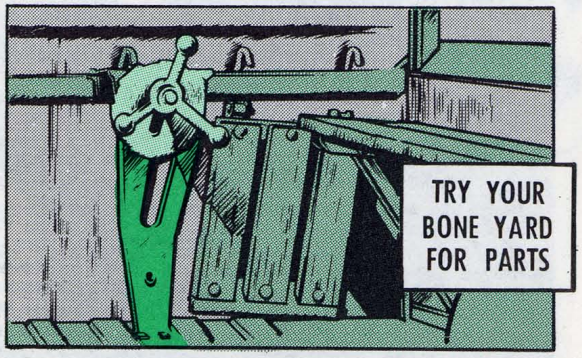
SFC G. R. E.

Dear Sergeant G. R. E.,

All you need is the authorization of your own command. That was the word in TB 750-981-1 (Jan 68), Article 113.

Don't go looking in the supply system for some of the parts you'll need, though. You'll have to depend on fabrication for a few of 'em.

Half-Mast



DOOR HANDLE DOWN

Dear Half-Mast,

The right position for inside door handles of the 3/4-ton truck is straight down, if you go by Fig 216, TM 9-8030 w/Ch.8 & 9 (Jun 68).

But para 223e(2) in TM 9-8031-2 w/Ch 3 (Jan 68) says the handle should be "in a horizontal position (pointing toward the rear of the door)."

Which is right?

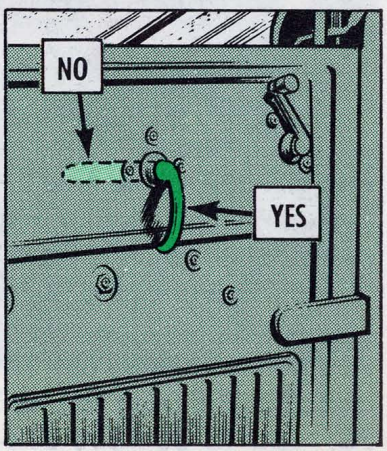
CW2 M. P. C.

Dear Mr. M.P.C.

On all tactical trucks, the inside door handle should be positioned so the open side is pointed down. Or, if straight down makes the door handle and window handle butt heads, position the door handle so it's pointing more toward the front of the door.

This's in the interest of safety. If the door handle is pointing toward the back of the door, someone may lean on it and open the door accidentally — very messy if this "someone" falls out while the vehicle's doing about 40 MPH!

Half-Mast



This is a selected list of recent pubs of interest to organizational maintenance personnel. This list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4 (Jun 69), and Ch 5 (Apr 70), TM's, TB's, etc.; DA Pam 310-6 (Jul 70), SC's and SM's; DA Pam 310-7 (Mar 70), MWO's; and DA Pam 310-9 (May 69), COMSEC Pubs.

TECHNICAL MANUALS

TM 3-1040-241-20P, Aug, M6-1R Ingersoll-Rand Compressor.
TM 3-1040-244-20P, Aug, 3½ CFM AN-M4/C Stewart-Warner Air Comp.
TM 3-6665-267-20P, Jul, XM3 Acft Mtd Concealed Personnel Detector.
TM 5-3810-207-20P, Aug, 20-Ton Quickway M200 Crane-Shovel.
TM 5-3810-227-20P, Jul, Crane-Shovel, 20-Ton AH & D Mdl 2360.
TM 5-3895-230-20P, Aug, Rollers, Galion 3 Wheel 10-Ton.
TM 5-4930-220-12, Jul, 600-Gal Tank Unit.
TM 5-6115-376-13, Aug, 45-KW 60 HZ Generators: PU's 407/M, 699/M, 408/M, 700/M.
TM 5-6115-573-15, Jul, 4/10-KW "Silent" Generator.
TM 5-6675-228-20P, Jul, Microwave Surveying Equip.
TM 9-1000-202-10, Jul, Weapons.
TM 9-1005-249-12, Ch 4, Aug, M16, M16A1 Rifle.
TM 9-1330-208-25, Jun, XM118 Grenade Dispenser on AH-1G.
TM 9-2320-260-20P, Jun, G908-Series 5-Ton Truck.
TM 11-1510-209-20-2, Jun, U-21A.
TM 11-5820-790-12, Jul, AN/USQ-46A Power Sup Gp OP-63/USQ-46.
TM 11-5850-218-20P, Sep, OV-1C.
TM 11-5855-217-12-1, Jul, AN/VSS-3A Infrared Searchlight.
TM 11-6625-2391-15, Jul, Telephone/GCM-4 Test Set.
TM 55-1510-201-PMP, Jul, U-8.
TM 55-1510-203-10, Aug, U-6.
TM 55-1510-203-20, Aug, U-6.
TM 55-1510-205-20, Aug, U-1.
TM 55-1520-204-20P, Jul, OH-13.
TM 55-1520-206-20P, Jul, OH-23.
TM 55-1520-219-PMP, Jul, UH-1A-1B.
TM 55-1520-225-PMD, Aug, OH-13.
TM 55-1520-226-PMD, Aug, OH-13.
TM 55-1520-226-PMI, Aug, OH-13.
TM 55-1520-227-CL, Jul, CH-47.
TM 55-1520-227-10, Aug, CH-47.
TM 55-1520-227-20-1, Aug, CH-47.
TM 55-1520-227-20-2, Aug, CH-47.

MODIFICATION WORK ORDERS

3-1040-204-45/1, Jul, M2A1-7 Portable Flamethrower.
9-1430-580-20/1, Sep, AN/GSA-77 Air Defense Sys.
11-5895-490-40/1, Aug, RT-589/APX-72 Radio on all fixed and rotor wing.
11-6625-644-40/1, Aug, Test Set SM-335/ASM for CH-47.
55-1500-210-30/32, Aug, CH-47A, B, C.
55-1510-204-40/6, Aug, OV-1.
55-1520-217-30/42, Jul, CH-54A.
55-1520-219-30/1, Aug, UH-1B.
55-1520-221-30/27, Aug, AH-1G.
55-1520-221-30/31, Aug, AH-1G, TH-1G.
55-1520-221-30/34, Sep, AH-1G.

MISCELLANEOUS

LO 9-1005-298-12, Jul, Armament Subsystem, Helicopter, 7.62 MM MG XM27E1.
LO 9-1015-215-12, Jul, M30 4.2 Mortar
LO 9-1450-585-12, Jun, XM730 SP GME Carrier.
SC 5180-90-CL-R10, Jul, Tool Kit, Gen Mech Lt Wt.
TB 55-1500-200-40/4, Aug, CH-47 A, B.
TB 55-1615-217-30/3, Sep, CH-54.
TB 55-6650-300-15, Aug, Fixed Wing and Rotor Wing.

Radioactivity Pubs

Hey, all who handle such — TB 750-248 (Apr 70) on the USA Mobility Equipment Command part of radioactive equipment is to be had at the St. Louis Publications Center. It joins these other radiological pubs: TB MED 232 (Sep 67), TB MED 249 (Jul 60), TB 700-3 (Aug 68), TM 3-261 (May 66), TB 750-237 (Feb 70), TM 3-240 (May 63), TB TC 7 (Sep 62) and SB 5-108 (Aug 60), TB 750-249 (Feb 70) and TB 55-1500-314-25 (Feb 70).

Just In Case

Have you gotten your copy of TM 750-244-7 (Jun 70) yet? It gives you the scoop on procedures for destruction of weapons to prevent enemy use.

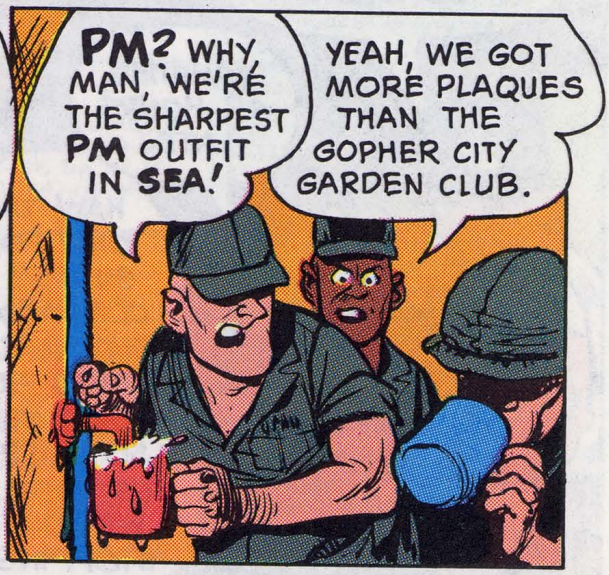
Where In The World?

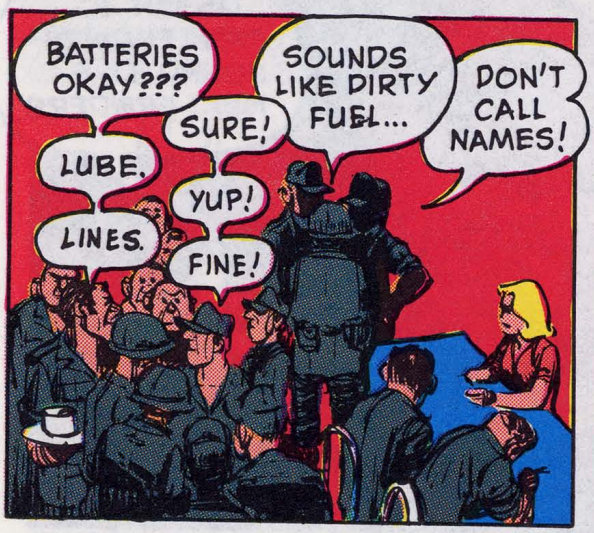
If you bird mechs are in doubt where to send your oil samples run your peepers over TB 55-6650-300-15 (Aug 70) on spectrometric oil analysis. All the labs are listed, along with the latest ASOAP poop.

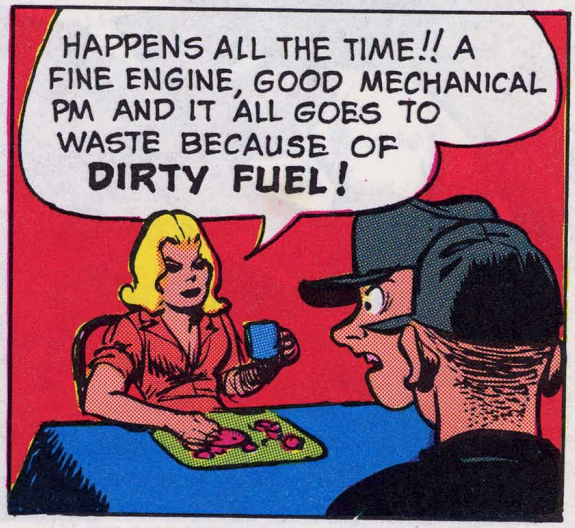
JOE'S DOPE
IT'S YOUR GAS, MAN!
HERE COMES THE OL' 13TH SUPER SPEED DELIVERY SERVICE!
YAHHHHH, 48 HOURS LATE!
HAW, THE ONLY POL SUPPLY COMPANY THAT NEEDS 3 DAYS TO NEGOTIATE 50 MILES OF MSR... WITHOUT STOPPING!
LISSEN TO THEM ENGINES— SOUND LIKE MEAT GRINDERS.

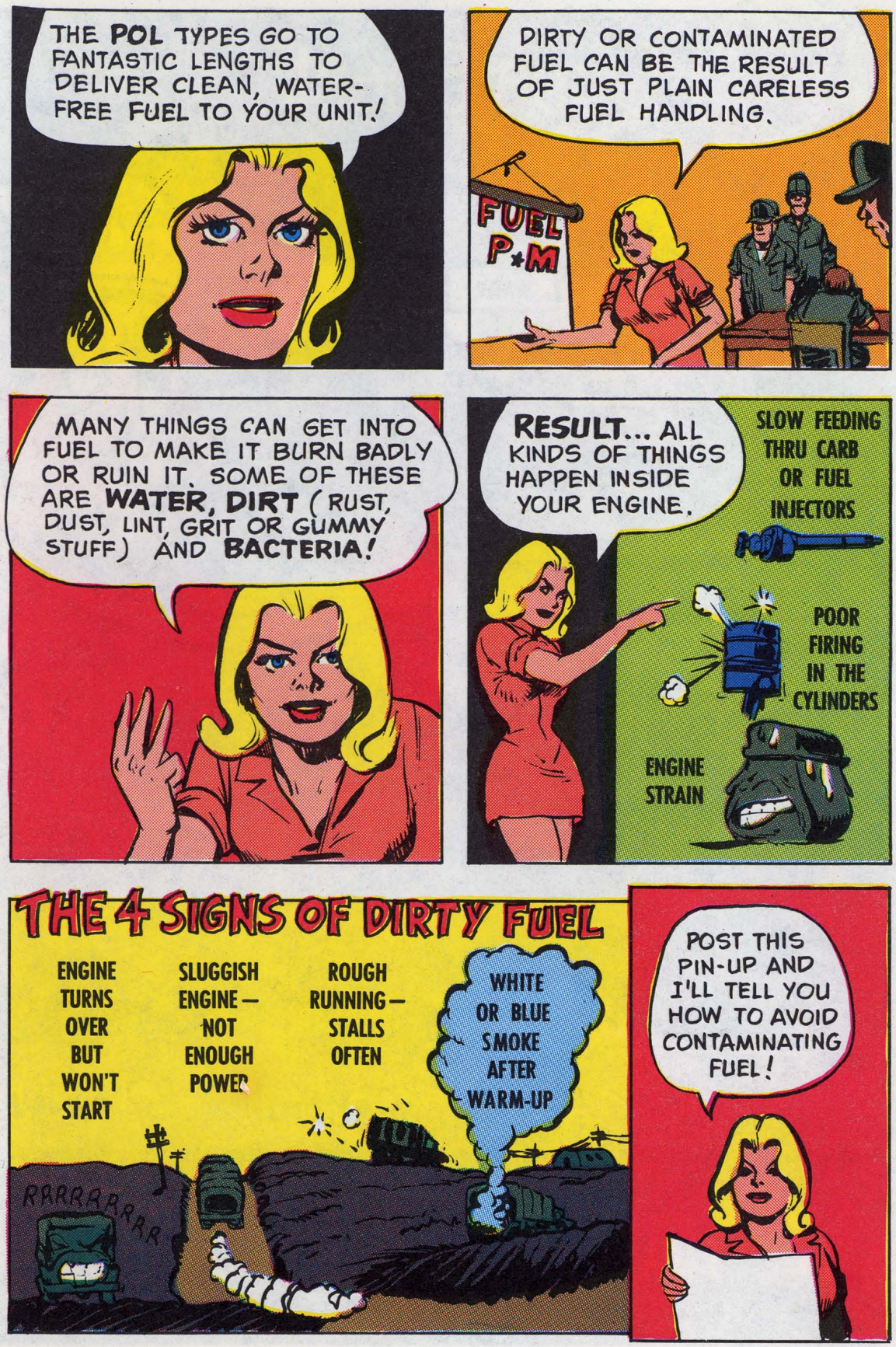
HERE'S Y'R MAIL, GRUNT!
WHO NEEDS IT!... THE RUM GOT HERE 3 DAYS AGO!
HERE'S YER SUPPLIES, SARGE, AS REQUESTED!
MAN, WE NEEDED THAT FUEL YESTERDAY... OUR MISSION'S COME 'N' GONE!

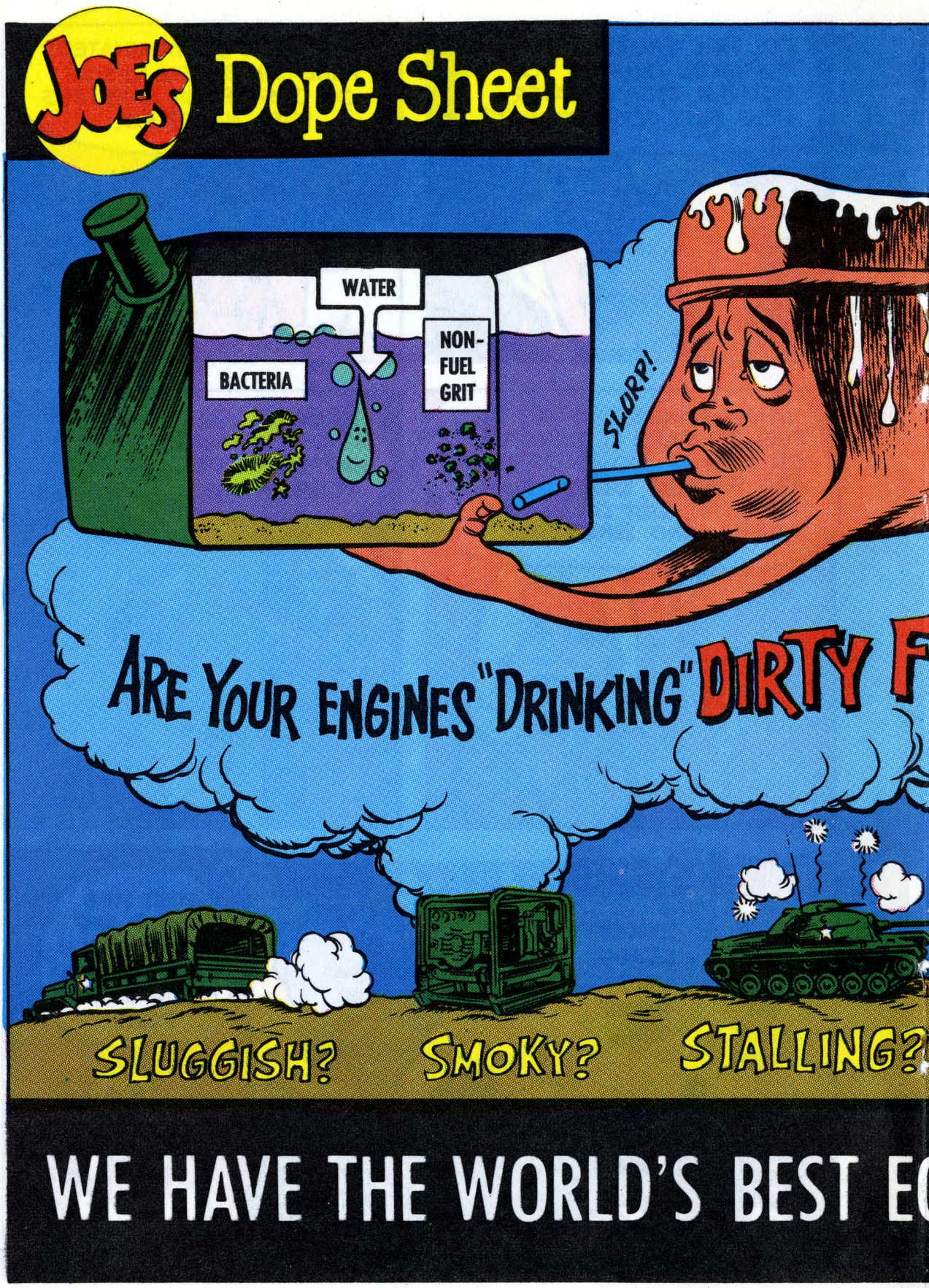
LISSEN, WE PUSHED OUR RIGS FAST AS WE COULD! OUR ENGINES JUST DON'T PERFORM LIKE THEY SHOULD!
BUM PM IF YOU ASK ME!


PM? WHY, MAN, WE'RE THE SHARPEST PM OUTFIT IN SEA!
YEAH, WE GOT MORE PLAQUES THAN THE GOPHER CITY GARDEN CLUB.

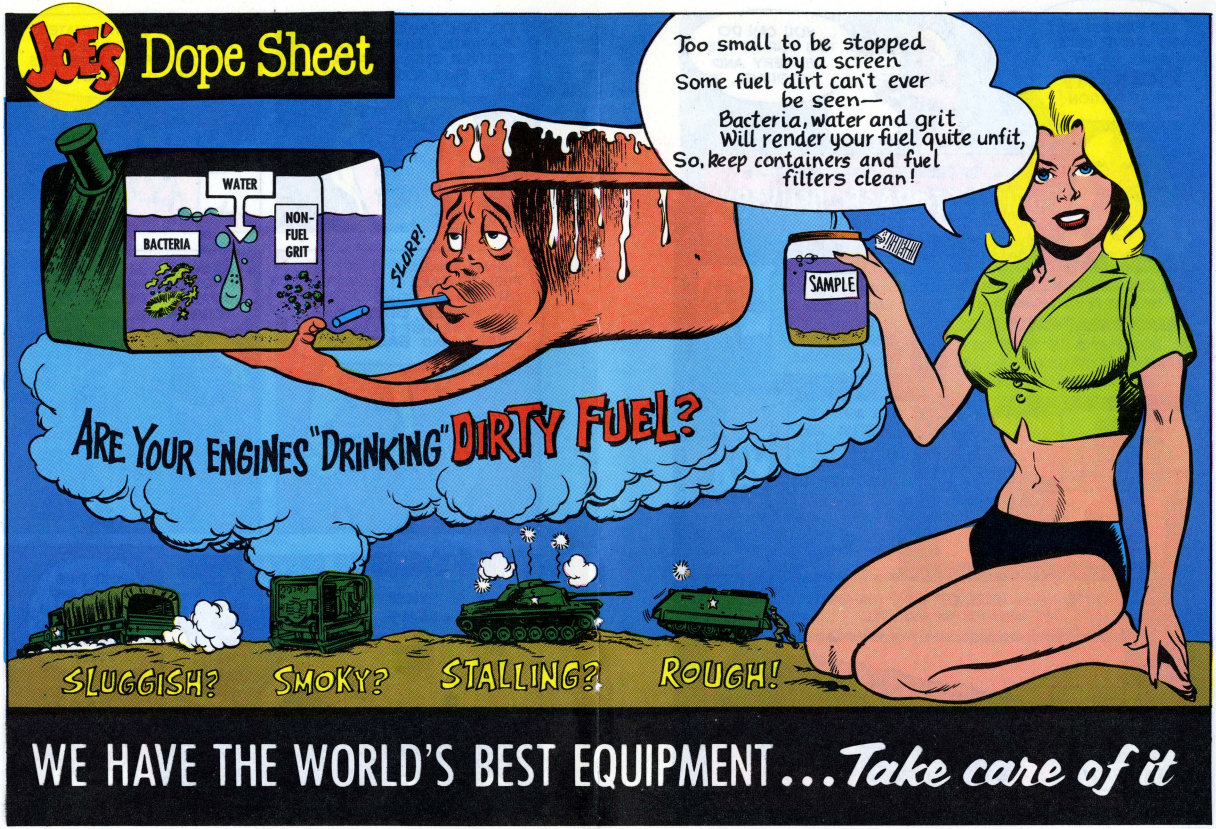

BATTERIES OKAY???
SURE!
LUBE.
YUP!
LINES.
FINE!
SOUNDS LIKE DIRTY FUEL...
DON'T CALL NAMES!


HAPPENS ALL THE TIME!! A FINE ENGINE, GOOD MECHANICAL PM AND IT ALL GOES TO WASTE BECAUSE OF DIRTY FUEL!


THE POL TYPES GO TO FANTASTIC LENGTHS TO DELIVER CLEAN, WATER-FREE FUEL TO YOUR UNIT!
DIRTY OR CONTAMINATED FUEL CAN BE THE RESULT OF JUST PLAIN CARELESS FUEL HANDLING.
FUEL P*M
MANY THINGS CAN GET INTO FUEL TO MAKE IT BURN BADLY OR RUIN IT. SOME OF THESE ARE WATER, DIRT (RUST, DUST, LINT, GRIT OR GUMMY STUFF) AND BACTERIA!
RESULT... ALL KINDS OF THINGS HAPPEN INSIDE YOUR ENGINE.
SLOW FEEDING THRU CARB OR FUEL INJECTORS
POOR FIRING IN THE CYLINDERS
ENGINE STRAIN
THE 4 SIGNS OF DIRTY FUEL
ENGINE TURNS OVER BUT WON'T START
SLUGGISH ENGINE — NOT ENOUGH POWER
ROUGH RUNNING — STALLS OFTEN
WHITE OR BLUE SMOKE AFTER WARM-UP
RRRRRRRRR
POST THIS PIN-UP AND I'LL TELL YOU HOW TO AVOID CONTAMINATING FUEL!



IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BU



IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

QUIPMENT... *Take care of it*

LLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

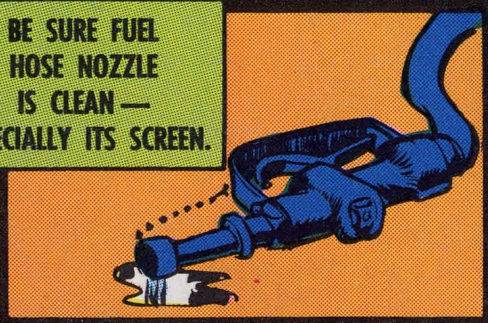
HOW TO PREVENT CONTAMINATION DURING STORAGE OR DELIVERY

CHECK FUEL STORAGE ONCE-A-WEEK!! ESPECIALLY IN HOT AND HUMID AREAS.

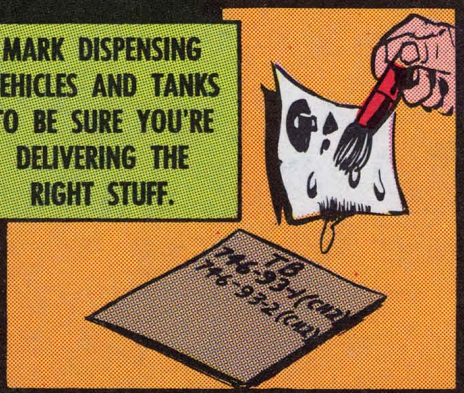
CHECK AVIATION FUEL TANKER FOR WATER CONTAMINATION DAILY — AND ANY TIME A NEW BATCH ARRIVES.

USE DIPSTICK FOR CHECKING! USE WATER INDICATOR PASTE FSN 6850-090-1361.

BE SURE FUEL HOSE NOZZLE IS CLEAN — ESPECIALLY ITS SCREEN.

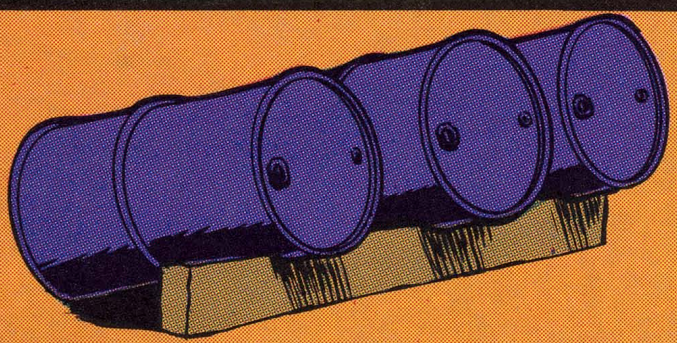


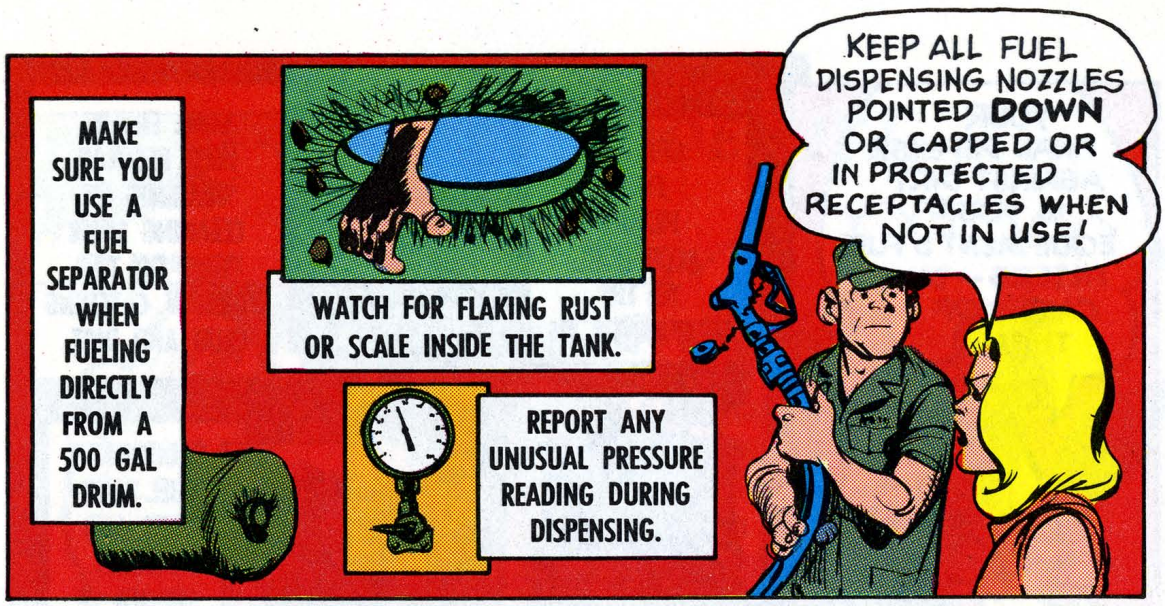
MARK DISPENSING VEHICLES AND TANKS TO BE SURE YOU'RE DELIVERING THE RIGHT STUFF.



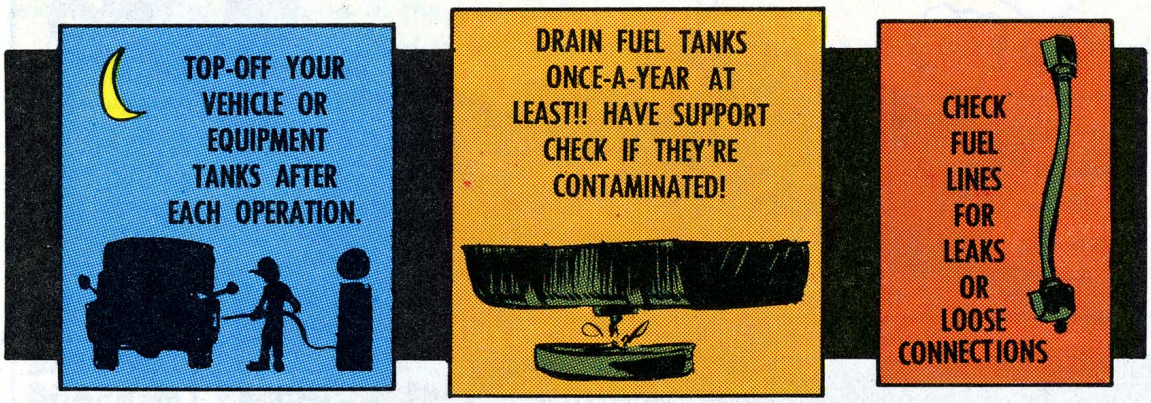
AVOID MIXING LOADS. KEEP USING CONTAINERS OR TANKS FOR THE SAME FUEL.

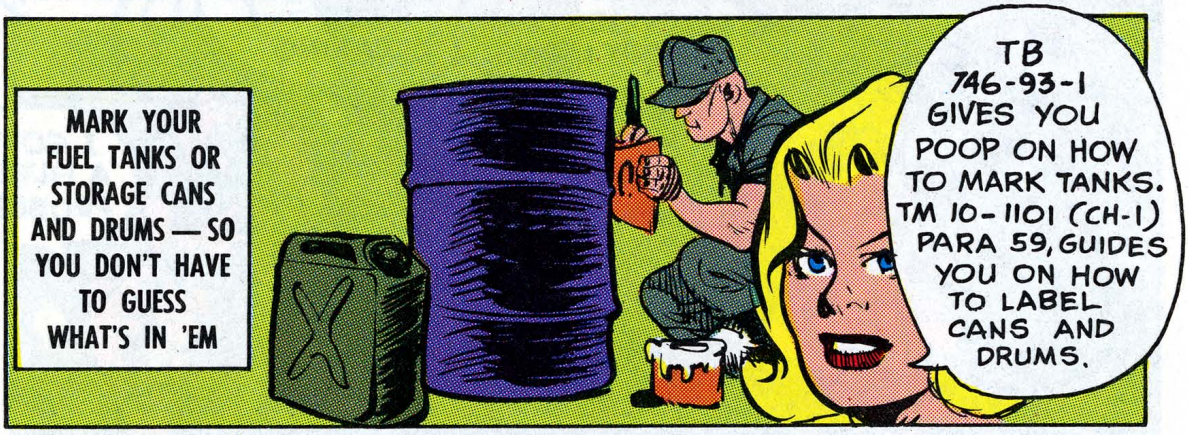
STORE DRUMS ON THEIR SIDES—TILTED AT AN ANGLE AND WITH BUNGS AT 3 OR 9 O'CLOCK.

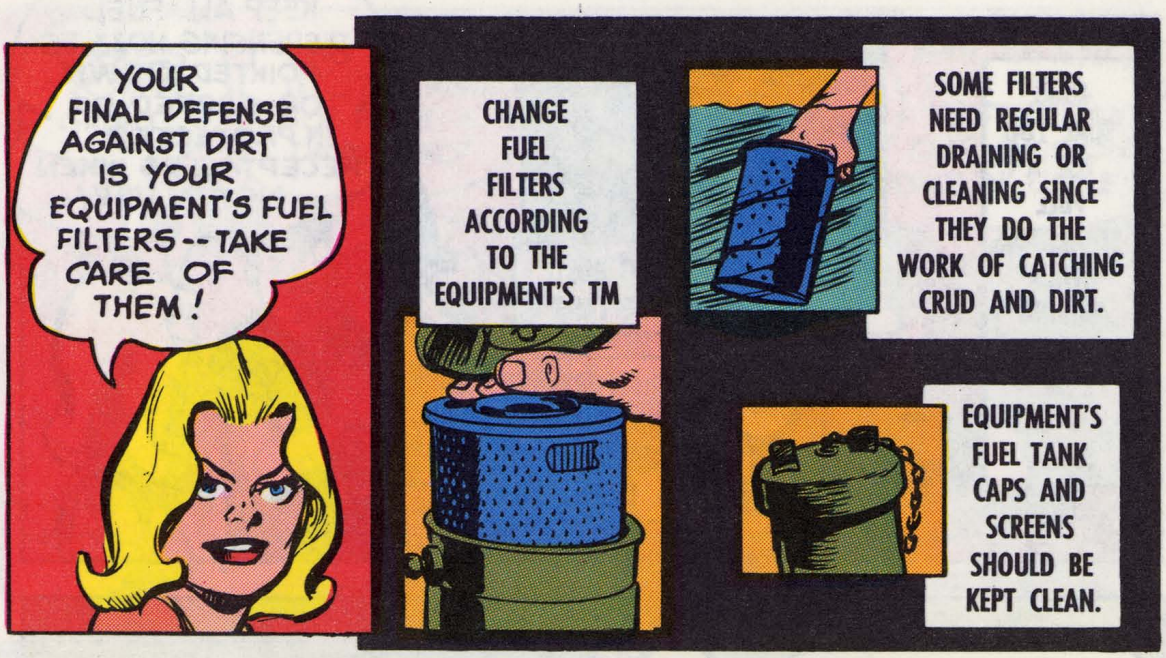


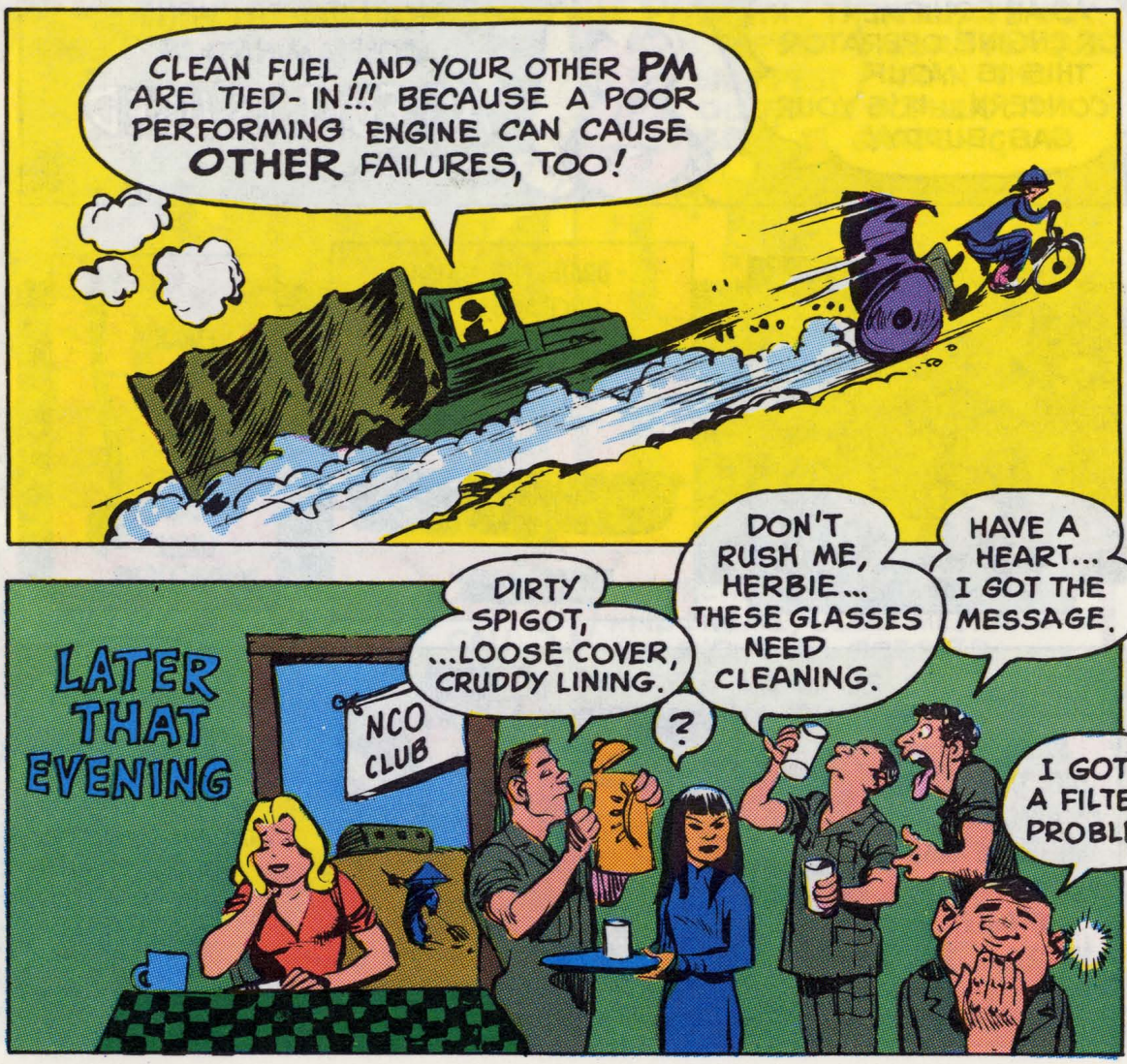

MAKE SURE YOU USE A FUEL SEPARATOR WHEN FUELING DIRECTLY FROM A 500 GAL DRUM.
WATCH FOR FLAKING RUST OR SCALE INSIDE THE TANK.
REPORT ANY UNUSUAL PRESSURE READING DURING DISPENSING.
KEEP ALL FUEL DISPENSING NOZZLES POINTED DOWN OR CAPPED OR IN PROTECTED RECEPTACLES WHEN NOT IN USE!

AS AN EQUIPMENT OR ENGINE OPERATOR THIS IS YOUR CONCERN... IT'S YOUR GAS, BUDDY!
HOW TO PREVENT CONTAMINATION
AS FUEL IS USED


TOP-OFF YOUR VEHICLE OR EQUIPMENT TANKS AFTER EACH OPERATION.
DRAIN FUEL TANKS ONCE-A-YEAR AT LEAST!! HAVE SUPPORT CHECK IF THEY'RE CONTAMINATED!
CHECK FUEL LINES FOR LEAKS OR LOOSE CONNECTIONS


MARK YOUR FUEL TANKS OR STORAGE CANS AND DRUMS — SO YOU DON'T HAVE TO GUESS WHAT'S IN 'EM
TB 746-93-1 GIVES YOU POOP ON HOW TO MARK TANKS. TM 10-1101 (CH-1) PARA 59, GUIDES YOU ON HOW TO LABEL CANS AND DRUMS.


YOUR FINAL DEFENSE AGAINST DIRT IS YOUR EQUIPMENT'S FUEL FILTERS -- TAKE CARE OF THEM!
CHANGE FUEL FILTERS ACCORDING TO THE EQUIPMENT'S TM
SOME FILTERS NEED REGULAR DRAINING OR CLEANING SINCE THEY DO THE WORK OF CATCHING CRUD AND DIRT.
EQUIPMENT'S FUEL TANK CAPS AND SCREENS SHOULD BE KEPT CLEAN.


CLEAN FUEL AND YOUR OTHER PM ARE TIED-IN!!! BECAUSE A POOR PERFORMING ENGINE CAN CAUSE OTHER FAILURES, TOO!
LATER THAT EVENING
NCO CLUB
DIRTY SPIGOT, ...LOOSE COVER, CRUDDY LINING.
?
DON'T RUSH ME, HERBIE... THESE GLASSES NEED CLEANING.
HAVE A HEART... I GOT THE MESSAGE.
I GOT A FILTER PROBLEM!

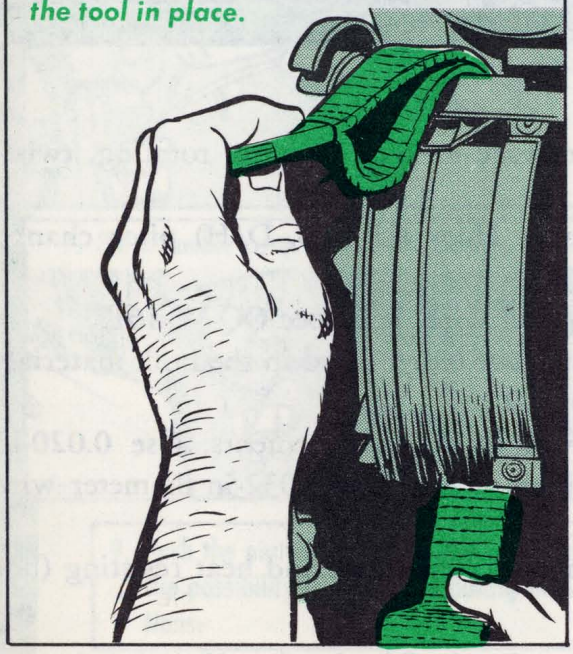
EASY DOES IT!

Dear Editor,

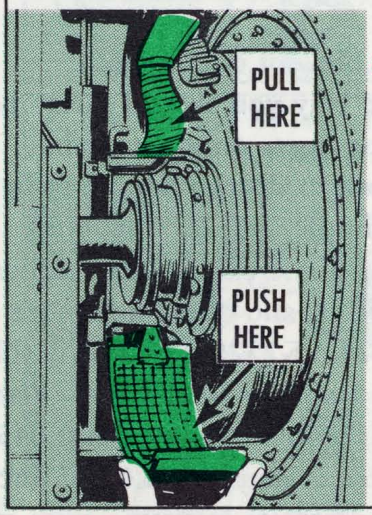
Whenever we cleaned the air filter on our Huey (UH-1) engine sand and dust separator, putting it back was a bit of a problem. The filter, P/N 1-010-320-04, bends real easy and would hang-up in the assembly.

Well, that's the way it used to be here, before we came up with this locally made tool.

To put the filter back we now slip the tool in place.

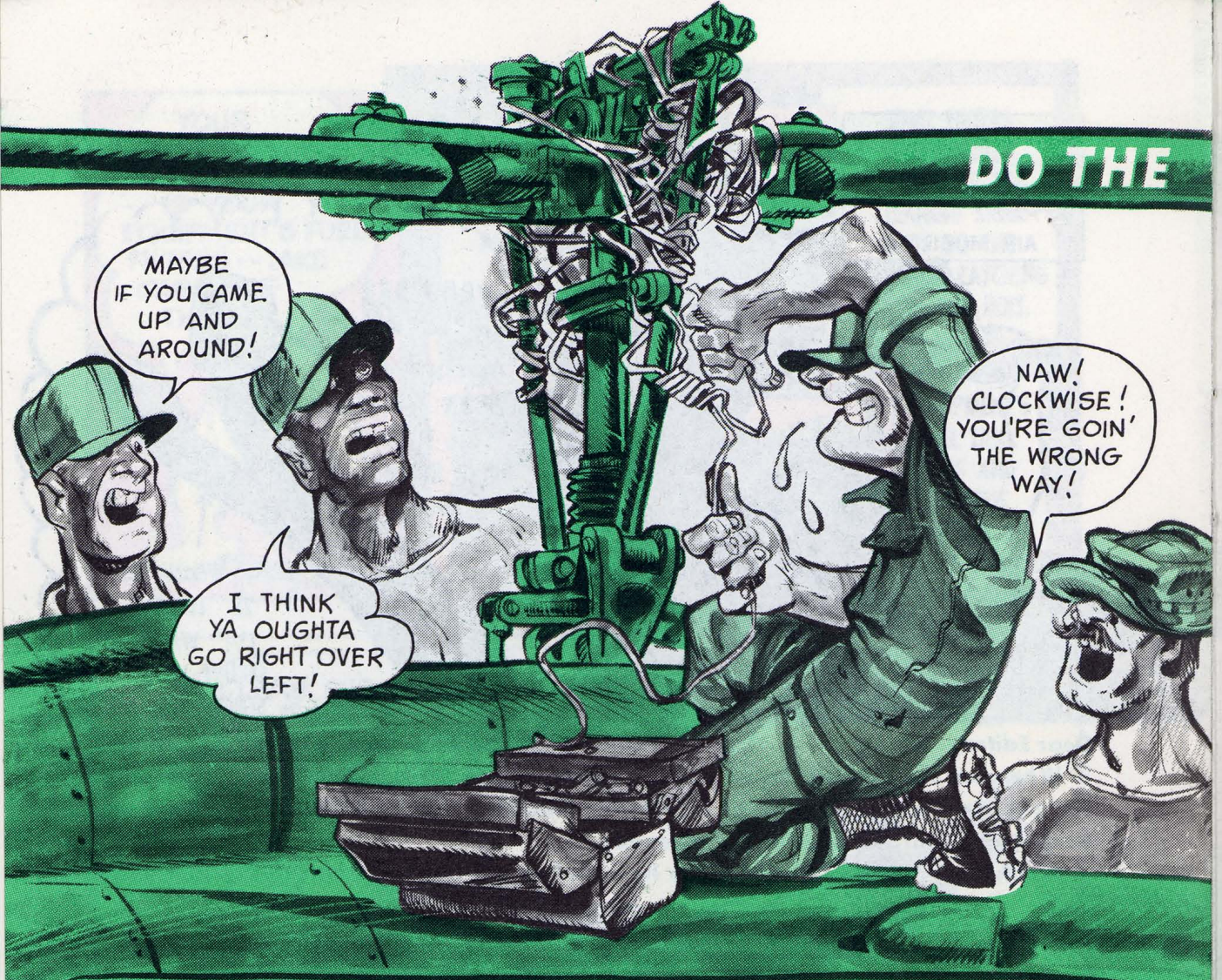


Next attach the tool clamp to one end of the filter. By gently pushing on the filter with one hand, while at the same time pulling on the tool strap with the other hand, the filter slides neatly into place . . . works like a charm.



Richard J. Mulligan
Edwards AFB, Cal.

(Ed Note—Good going! Of course, the tool will work fine on all separators except the new self-purging type which doesn't have the filter.)



Up tight, but not overstressed.

That's the way you should safety hardware to keep turning, rotating, twisting, vibrating parts on your bird.

Here's how to do the double-twist on a Huey (UH-1B, D/H) pitch change link, for example.

Latch onto some zinc coated carbon steel wire, Fed Spec QQ-W-461.

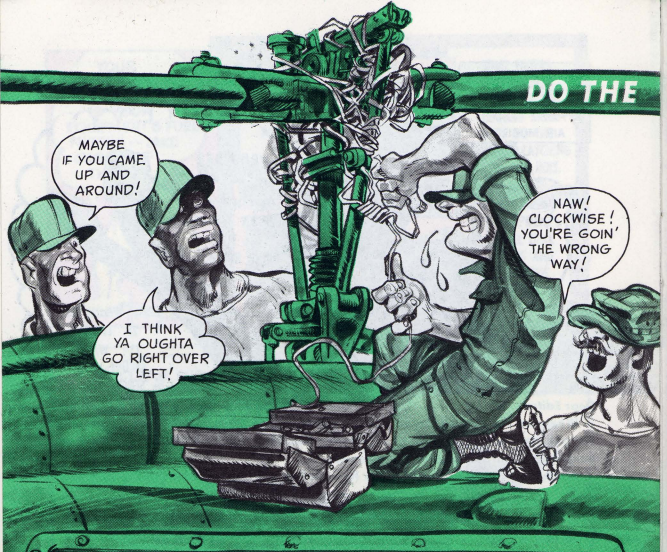
You'll find it, and other lock wire for your baby, listed in the bulk materials section of TM 55-1520-210-20P-2 (Nov 69).

When choosing wire follow these **minimum** requirements. Use 0.020-in diameter wire when the hole is 0.045 inch or less. Use 0.032-in diameter wire when the hole is more than 0.045 inch.

Use steel corrosion resisting wire where nonmagnetic and heat resisting (hot section) requirements have to be met.

Never reuse lock wire because it has lost strength and will break under additional tension. Cut a 2-ft piece of wire off the spool.

DO THE



Up tight, but not overstressed.

That's the way you should safety hardware to keep turning, rotating, twisting, vibrating parts on your bird.

Here's how to do the double-twist on a Huey (UH-1B, D/H) pitch change link, for example.

Latch onto some zinc coated carbon steel wire, Fed Spec QQ-W-461.

You'll find it, and other lock wire for your baby, listed in the bulk materials section of TM 55-1520-210-20P-2 (Nov 69).

When choosing wire follow these **minimum** requirements. Use 0.020-in diameter wire when the hole is 0.045 inch or less. Use 0.032-in diameter wire when the hole is more than 0.045 inch.

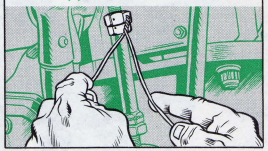
Use steel corrosion resisting wire where nonmagnetic and heat resisting (hot section) requirements have to be met.

Never reuse lock wire because it has lost strength and will break under additional tension. Cut a 2-ft piece of wire off the spool.

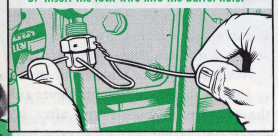
DOUBLE-TWIST

1. Thread the wire thru a hole in the lock nut so that both ends are about even. (Decide which hole in the barrel to use. The wire should act as a restraining force on the nut, in a tightening direction.)

2. Twist the lock wire in a clockwise direction and stop just short of the barrel hole.



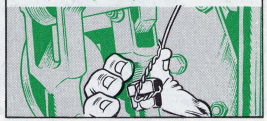
3. Insert the lock wire into the barrel hole.



4. Pull the wire taut.

5. Twist the wire clockwise to secure the nut to the barrel.

6. Stop twisting when you reach the clevis.



7. Put a double wrap around the clevis.

8. Twist the wire ¼ to ½ inch, or 3 to 6 twists. Cut off the remainder.

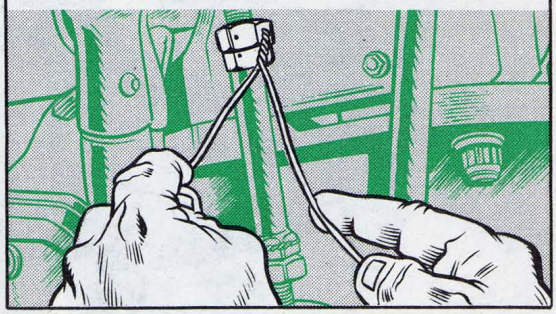
9. Push the pigtail inside the clevis to reduce the possibility of hand cuts during inspections.

That'll hold the torque on those link nuts.

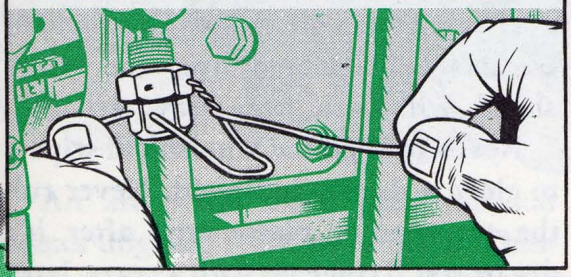
DOUBLE-TWIST

1. Thread the wire thru a hole in the lock nut so that both ends are about even. (Decide which hole in the barrel to use. The wire should act as a restraining force on the nut, in a tightening direction.)

2. Twist the lock wire in a clockwise direction and stop just short of the barrel hole.



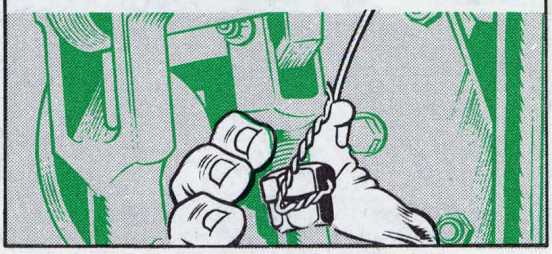
3. Insert the lock wire into the barrel hole.



4. Pull the wire taut.

5. Twist the wire clockwise to secure the nut to the barrel.

6. Stop twisting when you reach the clevis.



7. Put a double wrap around the clevis.

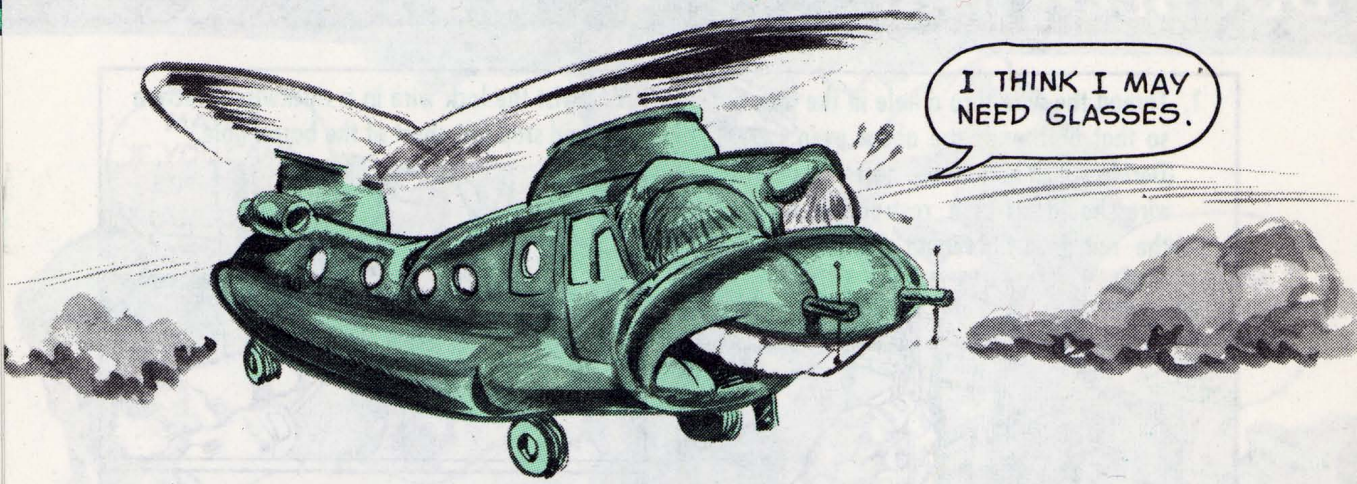
8. Twist the wire ¼ to ½ inch, or 3 to 6 twists. Cut off the remainder.

9. Push the pigtail inside the clevis to reduce the possibility of hand cuts during inspections.

That'll hold the torque on those link nuts.

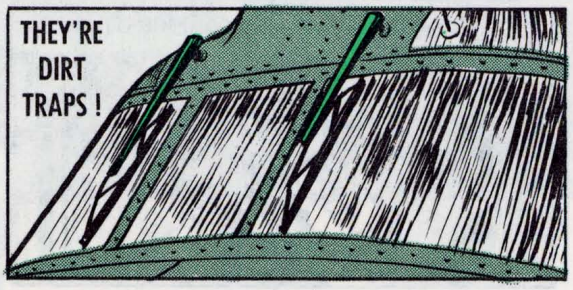
WINDSHIELD WET?

NO WIPERS, YET!



The idea behind the windshield wipers on a Chinook (CH-47) is to give your favorite throttle jockey good visibility when flying in the rain.

Turn 'em on for any other reason, like clearing off morning dew, and that 2-bit blade can ruin a costly windshield.



Seems like the wiper blade is a natural sand trap. Wiper action on a dry or damp windshield will scratch it for real.

Your best bet for cleaning a damp windshield?

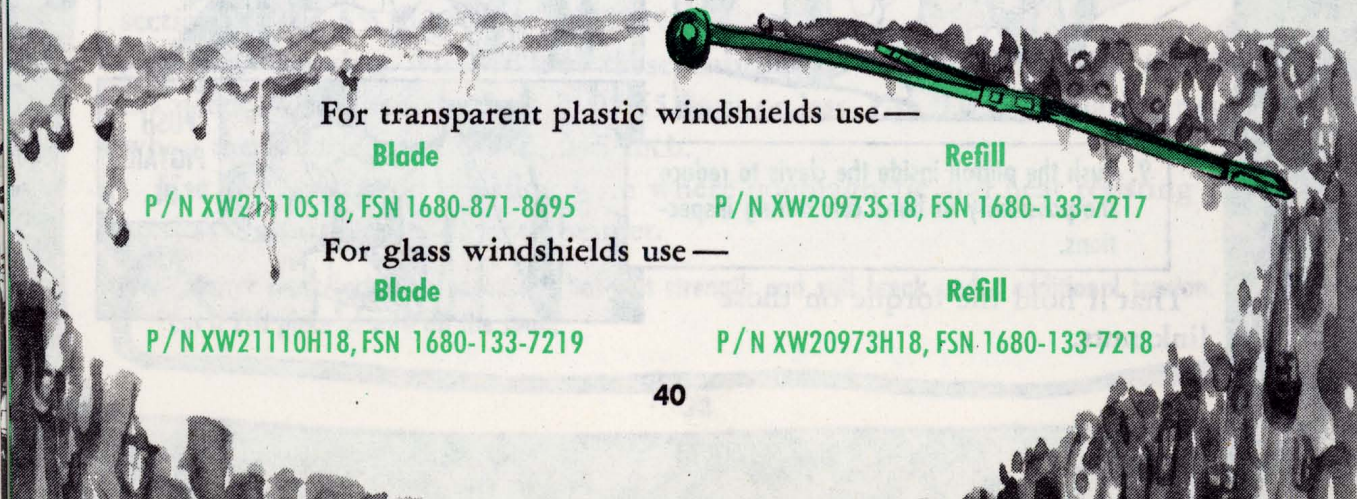
Make with a damp chamois, soft clean cloth or a soft tissue.

If you have water handy, a couple of buckets full, poured over the windshield, will wash away heavy grit.

Never turn on the windshield wipers to clean a dirty windshield. Never rub the transparent plastic-type after it's dry or you'll come up with a crazy, hazy windshield.

'Course, if the windshield is really dirty you'll find all the cleaning and polishing poop you need in para 1-102 of TM 55-1520-209-20-1, Ch 18 (Feb 70).

When it's time for a wiper blade change put on the right one. New, hard rubber blades are used only on glass windshields. They'll ruin transparent plastic.



For transparent plastic windshields use—

Blade

P/N XW21110S18, FSN 1680-871-8695

Refill

P/N XW20973S18, FSN 1680-133-7217

For glass windshields use—

Blade

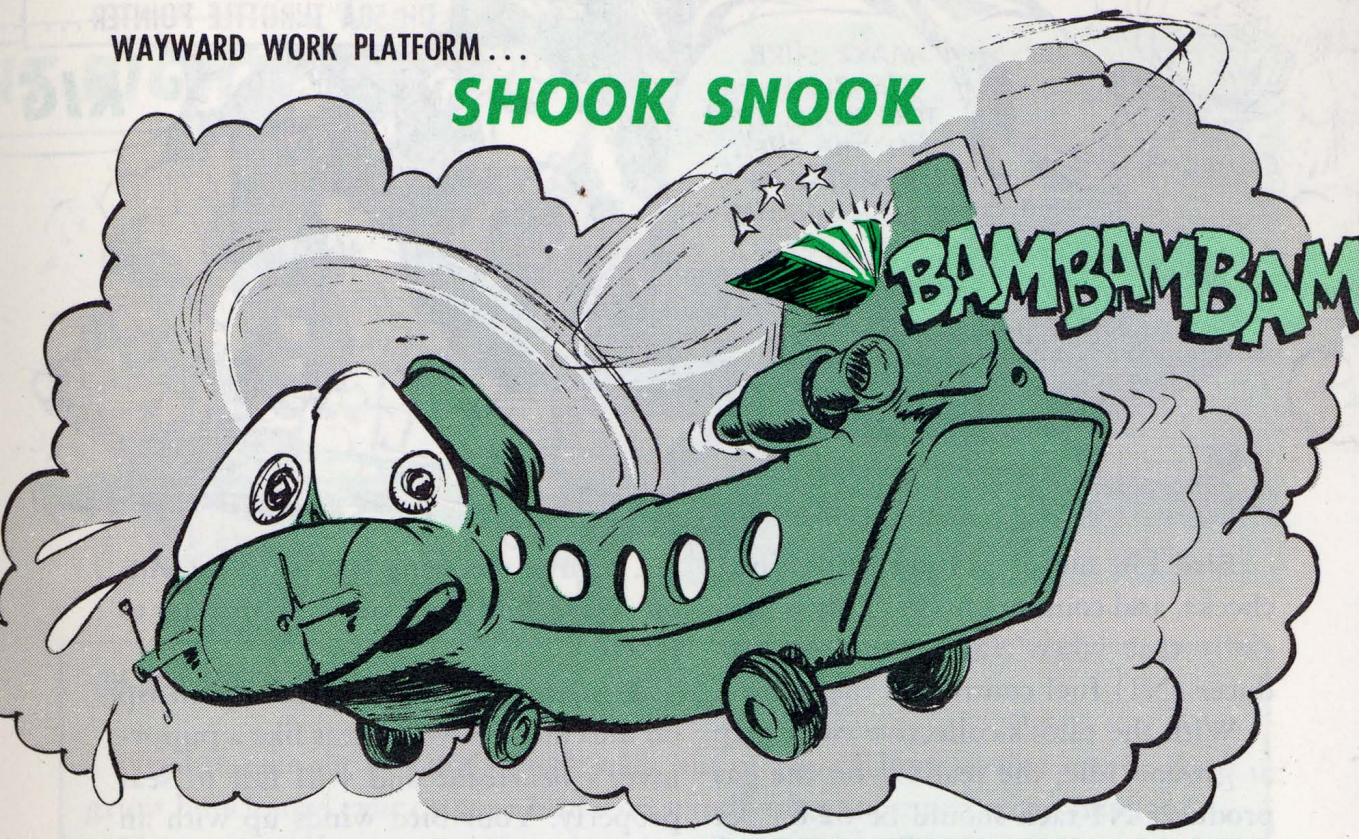
P/N XW21110H18, FSN 1680-133-7219

Refill

P/N XW20973H18, FSN 1680-133-7218

WAYWARD WORK PLATFORM . . .

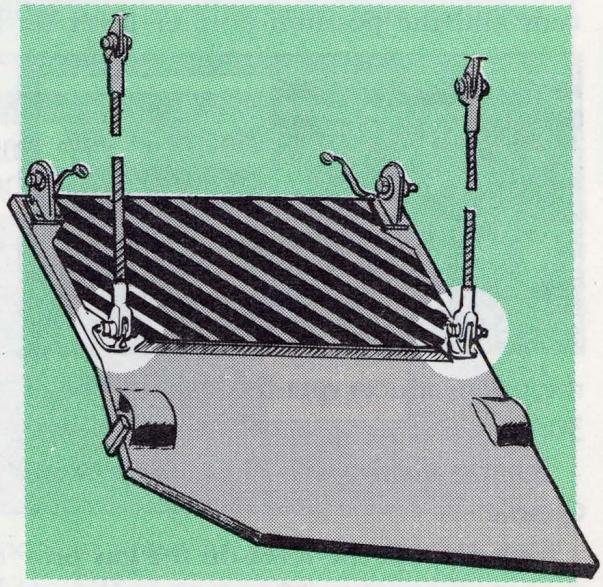
SHOOK SNOOK



An aft pylon work platform that comes unglued from an airborne Chinook's fuselage can do a heap of damage to rotor blades and give you a case of the shakes.

Sure that platform gets a lot of use by flyweight and heavyweight Chinook-mecs working on the rotor and drive system components. It has a 400-lb capacity and a lot of s-t-r-a-i-n goes into the attaching points — 'specially if you're a jolly green giant-type knuckle-skinner.

All the more reason you should be double eyeful to check the platform daily . . . sequence 5.27 of TM 55-1520-209-20PMD (22 Oct 69) and 5.24, TM 55-1520-227-20PMD (25 Aug 69).



- CHECK ATTACHING POINTS . . .
- BUTTON UP PLATFORM TIGHT WHEN YOU'RE FINISHED

After you've made sure the platform'll lock tightly, and fit the fuselage-flush like a bikini, check the attaching points for loose rivets, cracks, breaks.

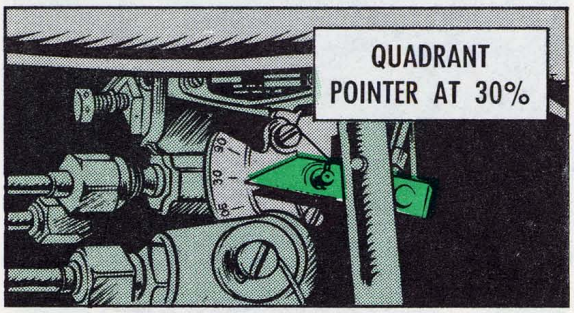
If repairs or replacement parts on the fitting assemblies or latch assemblies are called for, get it done PDQ. It's a heap safer to ground her while she's a-roosting than to have her grounded via the crash route. That smarts!

OH-58A THROTTLE POINTER . . .

RIG

Bird PM means pulling inspections, checks, and counter-checks. This is 'specially true when rigging the gas producer (N1) fuel control on the Kiowa.

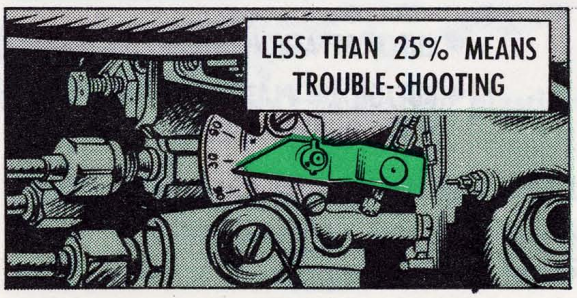
With the pilot's collective twist grip at ground idle, the reading on the gas producer N1 tach should be 62-63 per cent and the position pointer lever on



the gas producer quadrant should be at 30 per cent.

That's ideal . . . like a date with Connie!

But suppose the lever on the gas pro-



ducer fuel control points to 25 per cent or less (more'n 1/16 inch) off dead center. You're metering fuel with the cutoff valve and that ain't according to Hoyle.

First thing you know, the nylon tip on the cutoff valve flutters like a puppy-lover's heartbeat and will fail to seat properly. Your bird winds up with an after drip into the combustion chamber. Any extra JP-4 in the fuel burner spells t-r-o-u-b-l-e!

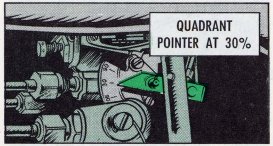
Make the lever come to the 30 per cent mark by adjusting the rod ends of the adjusting tube. Now the fuel cutoff valve and the metering valve are in the correct position for ground idle fuel schedule.

The ONLY way to adjust N1 speed with the level at the 30 per cent mark and twist grip set at ground idle, is with the idle speed adjustment screw — a job for GS who will check out for restricted or dirty inlet, compressor FOD, excessive bleed air leakage or clogged fuel manifold or proper control rigging.

Adjustments spelled out in para 5-178g of TM 55-1520-228-20 (Jul 69) only make sure that the lever hits the top and bottom stops when a pilot twists his collective grip from max power to shutdown.

Bird PM means pulling inspections, checks, and counter-checks. This is 'specially true when rigging the gas producer (N1) fuel control on the Kiowa.

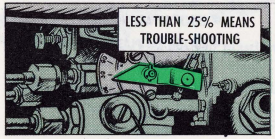
With the pilot's collective twist grip at ground idle, the reading on the gas producer N1 tach should be 62-63 per cent and the position pointer lever on



the gas producer quadrant should be at 30 per cent.

That's ideal . . . like a date with Connie!

But suppose the lever on the gas pro-



ducer fuel control points to 25 per cent or less (more'n 1/16 inch) off dead center. You're metering fuel with the cut-off valve and that ain't according to Hoyle.

First thing you know, the nylon tip on the cutoff valve flutters like a puppy-lover's heartbeat and will fail to seat properly. Your bird winds up with an after drip into the combustion chamber. Any extra JP-4 in the fuel burner spells t-r-o-u-b-l-e!

Make the lever come to the 30 per cent mark by adjusting the rod ends of the adjusting tube. Now the fuel cutoff valve and the metering valve are in the correct position for ground idle fuel schedule.

The ONLY way to adjust N1 speed with the level at the 30 per cent mark and twist grip set at ground idle, is with the idle speed adjustment screw — a job for GS who will check out for restricted or dirty inlet, compressor FOD, excessive bleed air leakage or clogged fuel manifold or proper control rigging.

Adjustments spelled out in para 5-178g of TM 55-1520-228-20 (Jul 69) only make sure that the lever hits the top and bottom stops when a pilot twists his collective grip from max power to shutdown.

So, p-u-l-e-e-s-e don't **you** try to marry the 30 per cent lever setting with an off-beat N1 tach reading.

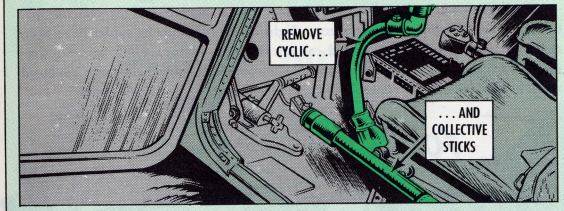
Your Kiowa has built-in tolerances in the fuel control system. With twist grip at ground idle, your K-bird can operate with the N1 tach reading anything from 62 to 63 per cent gas producer turbine RPM.

Your PMD, PMP inspection of the throttle pointer's proper position at ground idle will go a long way in getting you back to The World safely.

OH-58A FORCE TRIM . . . SWITCH FIX

Need to take the co-pilot's cyclic stick out of your Kiowa — like maybe for a grunt bunch med evac or your bird's on standby for an armed recon mission?

No sweat — if you remember that the pilot and co-pilot force trim switches on both cyclics are wired in series. If one electrical connection is broken, both are.



So, why not use a spare plug? Ask support to make an extra connector plug with P/N MS3126E14-19P, FSN 5935-724-7591. Use a short jumper wire to cross pin connections R with S. Keep plug on board. You'll find that poop in TB 750-922-2 (27 Apr 70) pg 53, para 39.

Plug in your adapter to keep force trim power working for the pilot.

While you're at it, remove the co-pilot's collective stick. No use in non-rated types misunderstanding a message and man-handling the collective pitch control.

With the cyclic-collective stick duo playing footsy in the unit's pad, there's no way for a grunt to jam the roller coaster control with a misplaced boot . . . or a gunner to ruin your whole day with a message mixup!

So, p-u-l-e-e-s-e don't **you** try to marry the 30 per cent lever setting with an off-beat N1 tach reading.

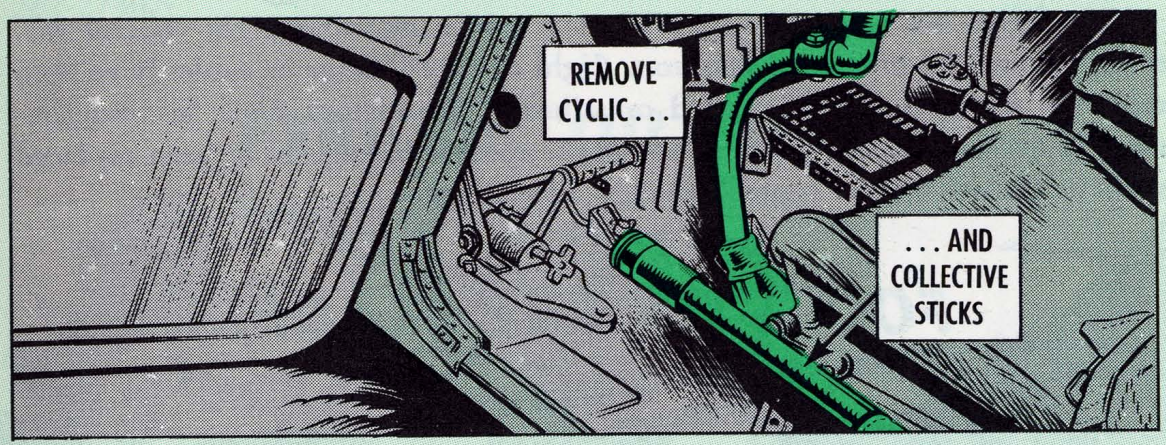
Your Kiowa has built-in tolerances in the fuel control system. With twist grip at ground idle, your K-bird can operate with the N1 tach reading anything from 62 to 63 per cent gas producer turbine RPM.

Your PMD, PMP inspection of the throttle pointer's proper position at ground idle will go a long way in getting you back to The World safely.

OH-58A FORCE TRIM . . . SWITCH FIX

Need to take the co-pilot's cyclic stick out of your Kiowa—like maybe for a grunt bunch med evac or your bird's on standby for an armed recon mission?

No sweat—if you remember that the pilot and co-pilot force trim switches on both cyclics are wired in series. If one electrical connection is broken, both are.



So, why not use a spare plug? Ask support to make an extra connector plug with P/N MS3126E14-19P, FSN 5935-724-7591. Use a short jumper wire to cross pin connections R with S. Keep plug on board. You'll find that poop in TB 750-922-2 (27 Apr 70) pg 53, para 39.

Plug in your adapter to keep force trim power working for the pilot.

While you're at it, remove the co-pilot's collective stick. No use in non-rated types misunderstanding a message and man-handling the collective pitch control.

With the cyclic-collective stick duo playing footsy in the unit's pad, there's no way for a grunt to jam the roller coaster control with a misplaced boot . . . or a gunner to ruin your whole day with a message mixup!

TEST FLIGHT NEEDED

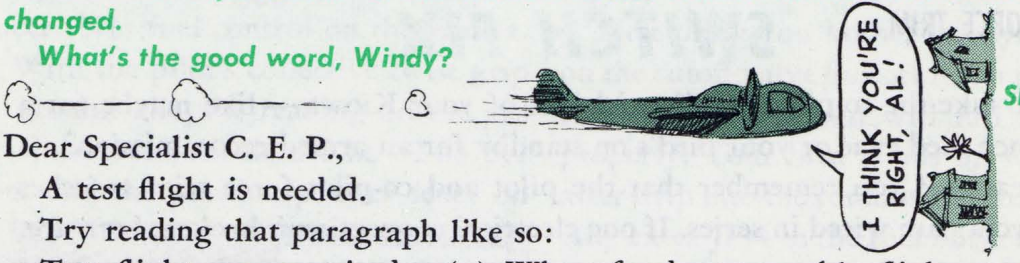
Dear Windy,

We're not sure about our reading of para 4a(1)(g) in TB 55-1500-311-25 (Mar 70) on required test flights.

Fact is, there's been some downright spirited discussions on whether a test flight is needed after replacement of an elevator control surface when none of the rigging is changed.

What's the good word, Windy?

SP6 C.E.P.



Dear Specialist C. E. P.,

A test flight is needed.

Try reading that paragraph like so:

Test flights are required—(g) When fixed or movable flight control surfaces, primary flight control actuators, flight control linkage or cables have been replaced, removed and reinstalled or adjusted. Mandatory flight test requirement is excluded when **bolts** in the flight control linkage have been replaced without disturbing the control linkage adjustment.

Windy

FOCUS ON THE BLADES

Look sharp, Cayuse (OH-6A) hotshots, when you eye the tail rotor blades per sequence 4.4 on the Daily checksheets. When the stainless steel abrasion strip at the leading edge is damaged, ground the bird before you lose the blade . . . or worse. Bone up on the inspection poop in para 8-9C of TM 55-1520-214-20 (Jul 69).

CLEANER FOR ALL!

Dear Windy,

We need some penetrant remover only for use with our inspection kit, FSN 6850-826-0981. Can you give us a hand?

SP6 D. M. S.

Dear Specialist D. M. S.,

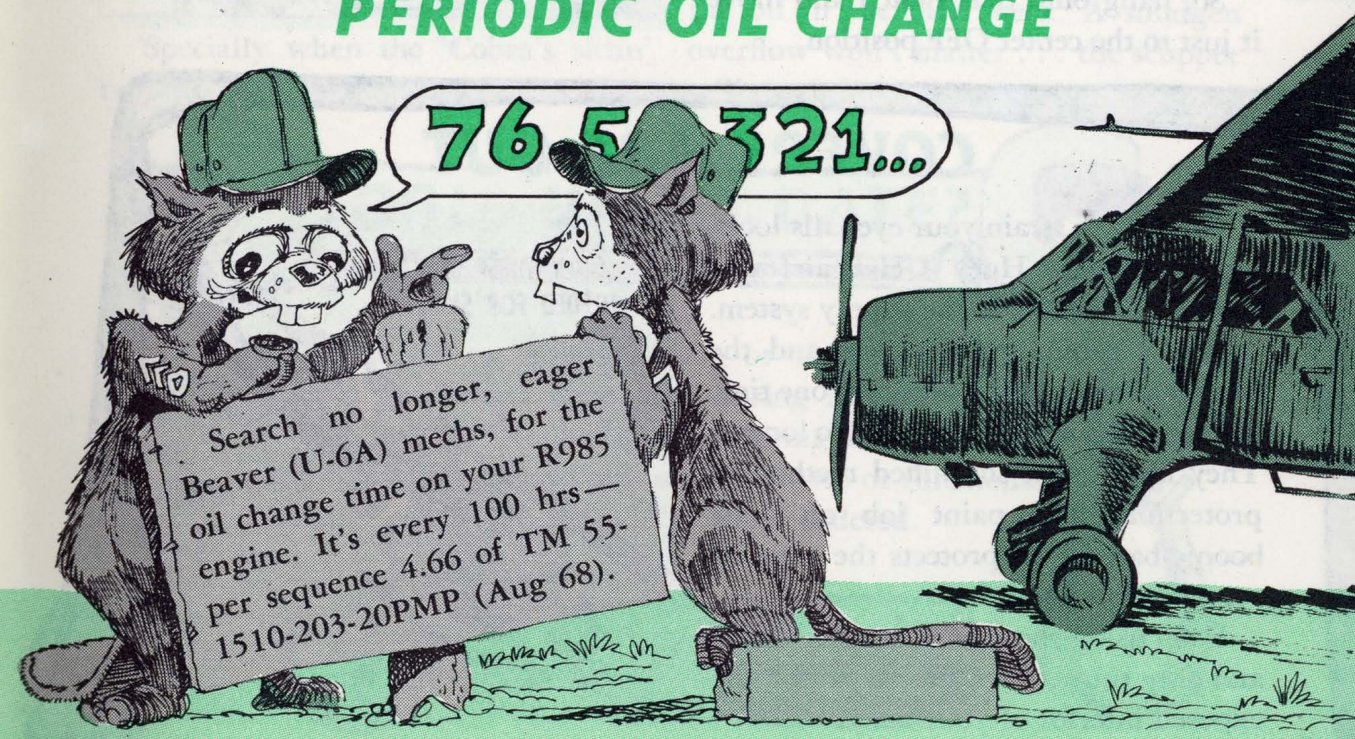
You're looking for 12-oz cans of remover—or cleaner—FSN 6850-142-8840. On DA Form 2765, in Advice Code columns 65, 66 write in 2B. This means you won't accept a substitute.

You can't use a developer and a penetrant from different kits, tho, because one manufacturer's product will differ from another. That's why these 2 items are not available as individual items. Order a new kit.

This remover works with developer and penetrant in inspection kit FSN 6850-782-2740.

Windy

PERIODIC OIL CHANGE



AH-1G PILOTS . . .

SAVE THE WINDSHIELD

So you Cobra hotshots hardly ever use the heater?

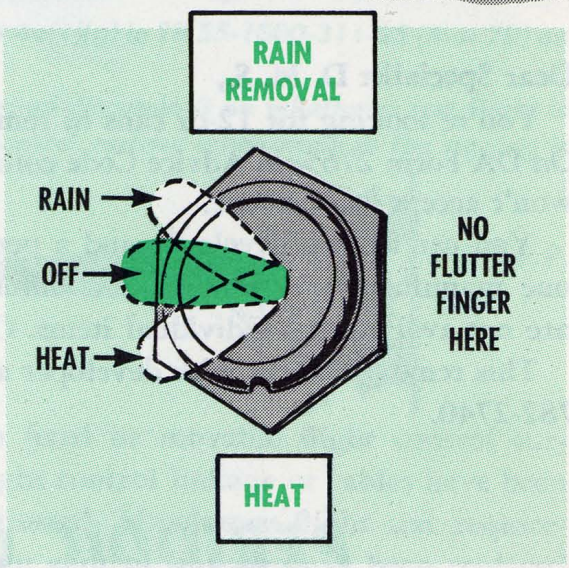
And you casually flip the switch off when you bring the bird in to roost?

Careful now. That maneuver could cost you a windshield . . . and they don't come cheap.

Happens — if your finger comes up on the switch, from HEAT thru OFF into RAIN REMOVAL.

Heat pours thru that defroster on the vacated bird. In a matter of minutes there's a hole in the transparent plastic big enough to put your fist thru.

So, hang onto that switch and move it just to the center OFF position.



COVERS ARE OUT

No need to strain your eyeballs looking for king-size Huey (UH-1) airframe covers. 'Taint any in the supply system.

Rotor, cabin, pylon covers and the like were made up by depots at one time for use when shipping birds. No longer. They now use a simplified method of protection. The paint job on your boonie-based bird protects the exterior . . . no covers needed.

Keep using those engine inlet, outlet and pitot tube covers, tho, to protect the exposed interior of your baby.

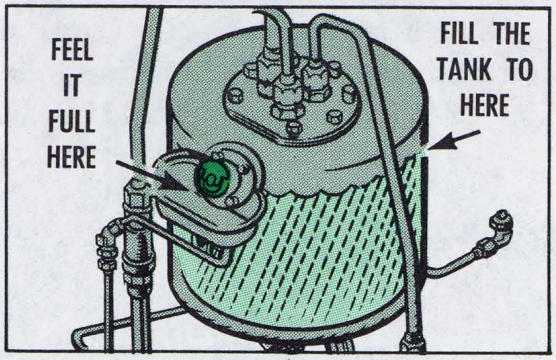
AH-1G ENGINE OIL TANK . . . FEEL IT FULL!

Getting the right amount of oil in your Snake's engine oil tank can make an Armymec feel like a suck-egg mule!

You're never sure you have the oil on the sight gage mark 'cause it's harder to see than goonies in the boonies.

'Specially when the 'Cobra's sittin' tail—or nose—low during servicing.

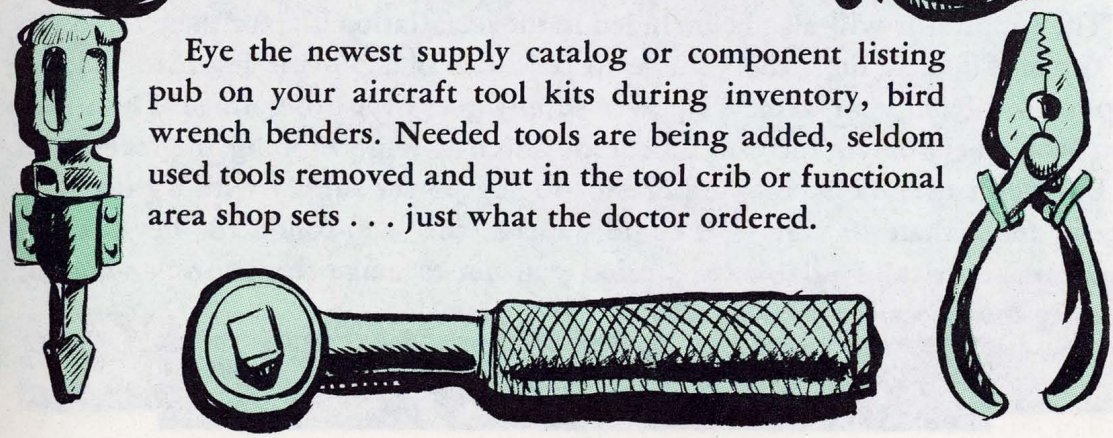
To make your job easier, fill the tank to the lip of the filler neck and stop



worrying about a maxi- or mini-fill.

And if it's dark, you can still add exacto amount. Just fill till you can feel the oil in the filler neck. A smidgen overflow won't matter . . . the scupper will catch it.

TOOLS UP-TO-DATE?

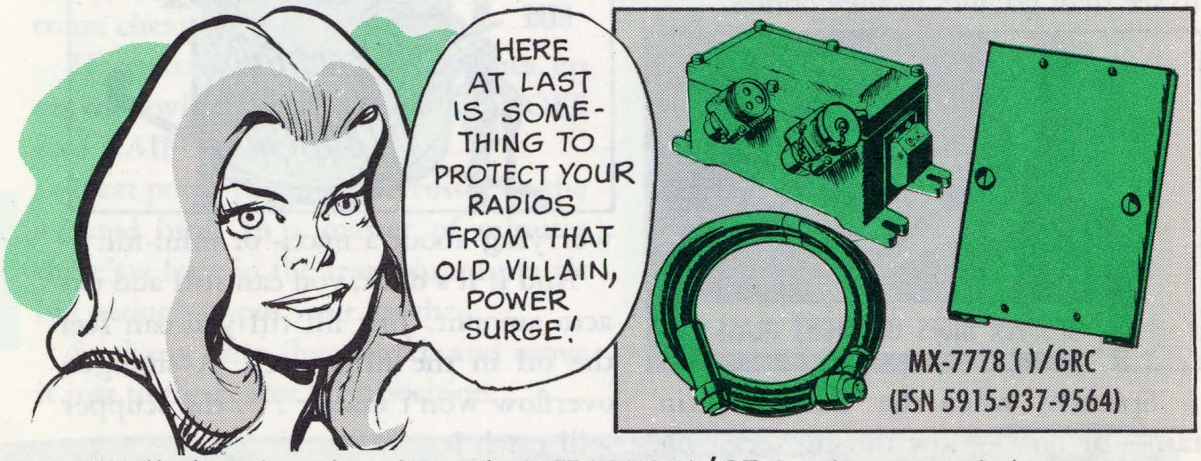


Eye the newest supply catalog or component listing pub on your aircraft tool kits during inventory, bird wrench benders. Needed tools are being added, seldom used tools removed and put in the tool crib or functional area shop sets . . . just what the doctor ordered.

You've probably gnashed your molars aplenty over power-surge hangups.

Y'may have had your loyal radio set downtimed by too much voltage and found your tracked vehicle fresh out of communication.

Y'might have wondered whether there wasn't something that would cut down this power-surge business in the AN/VRC-12 radio series, the AN/VRC-53, AN/VRC-64, AN/GRC-125, AN/GRC-160, or the AN/GRC-106.



Well, there is such an item, the MX-7778 ( )/GRC voltage transient suppressor.

The MX-7778 is new and available. You tracked vehicle guys can go after it with FSN 5915-937-9564, using para 2-29, TB 750-911-4 (Jul 70) as your authority to order, and TM 11-5915-223-12 (Jan 69) tells you all about it. It costs $279.

The suppressor will also be included in the installation kits for these radio sets.

What it does is limit the voltage to the load at a 36-volt level, in case the input level from your vehicle's power supply goes over this voltage. This means you won't be worryin' all the time about high voltage zapping the transistors.

But don't ever hook that suppressor to any power supply with a rated voltage of more than 40 volts—it could damage the semi-conductor devices.

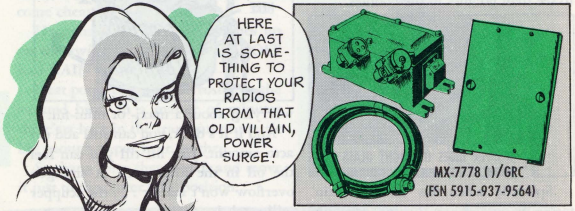
There's a decal available, to remind you not to make the improper hookup. This caution decal (FSN 9905-177-5239) reads:

"SUSTAINED OPERATING VOLTAGE ON SUPPRESSOR SHOULD NOT EXCEED 40 VOLTS DC"

You've probably gnashed your molars aplenty over power-surge hangups.

Y'may have had your loyal radio set downtimed by too much voltage and found your tracked vehicle fresh out of communication.

Y'might have wondered whether there wasn't something that would cut down this power-surge business in the AN/VRC-12 radio series, the AN/VRC-53, AN/VRC-64, AN/GRC-125, AN/GRC-160, or the AN/GRC-106.



Well, there is such an item, the MX-7778 ( )/GRC voltage transient suppressor.

The MX-7778 is new and available. You tracked vehicle guys can go after it with FSN 5915-937-9564, using para 2-29, TB 750-911-4 (Jul 70) as your authority to order, and TM 11-5915-223-12 (Jan 69) tells you all about it. It costs $279.

The suppressor will also be included in the installation kits for these radio sets.

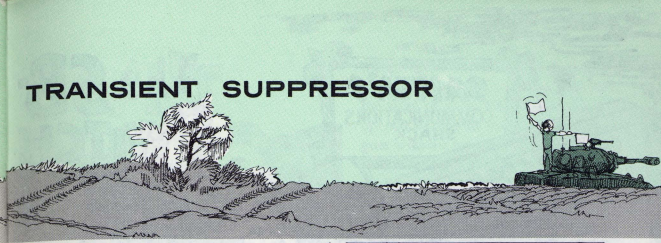
What it does is limit the voltage to the load at a 36-volt level, in case the input level from your vehicle's power supply goes over this voltage. This means you won't be worryin' all the time about high voltage zapping the transistors.

But don't ever hook that suppressor to any power supply with a rated voltage of more than 40 volts—it could damage the semi-conductor devices.

There's a decal available, to remind you not to make the improper hookup. This caution decal (FSN 9905-177-5239) reads:

"SUSTAINED OPERATING VOLTAGE ON SUPPRESSOR SHOULD NOT EXCEED 40 VOLTS DC"

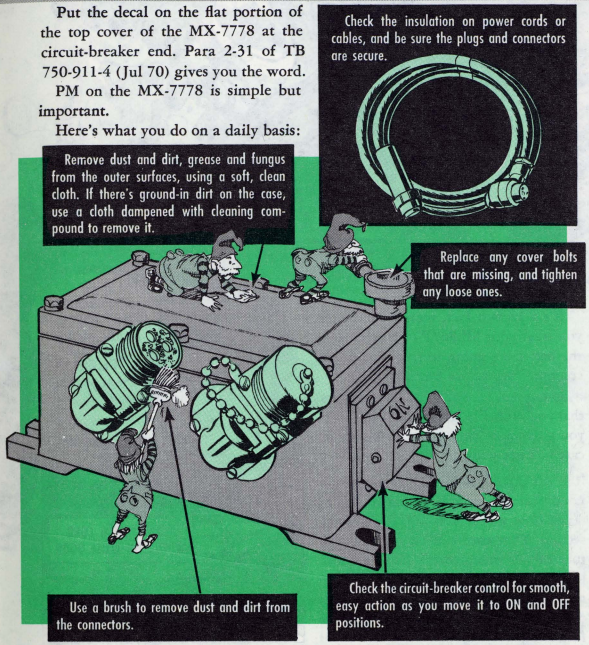
TRANSIENT SUPPRESSOR



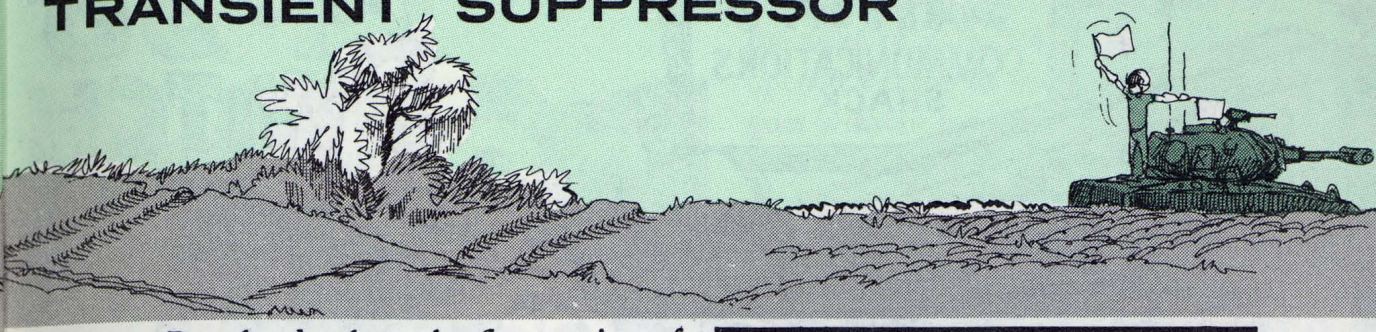
Put the decal on the flat portion of the top cover of the MX-7778 at the circuit-breaker end. Para 2-31 of TB 750-911-4 (Jul 70) gives you the word.

PM on the MX-7778 is simple but important.

Here's what you do on a daily basis:



TRANSIENT SUPPRESSOR

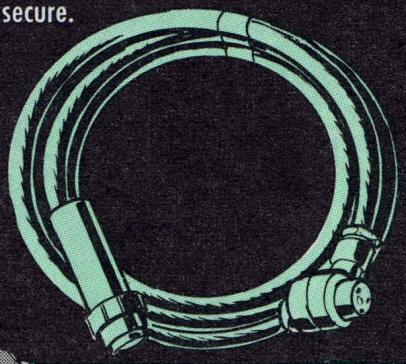


Put the decal on the flat portion of the top cover of the MX-7778 at the circuit-breaker end. Para 2-31 of TB 750-911-4 (Jul 70) gives you the word.

PM on the MX-7778 is simple but important.

Here's what you do on a daily basis:

Check the insulation on power cords or cables, and be sure the plugs and connectors are secure.



Remove dust and dirt, grease and fungus from the outer surfaces, using a soft, clean cloth. If there's ground-in dirt on the case, use a cloth dampened with cleaning compound to remove it.

Replace any cover bolts that are missing, and tighten any loose ones.

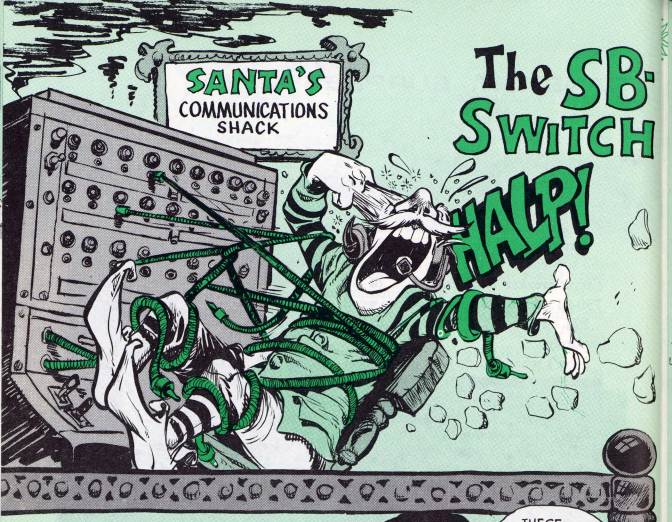
Use a brush to remove dust and dirt from the connectors.

Check the circuit-breaker control for smooth, easy action as you move it to ON and OFF positions.

It's a known fact, man—the better you treat your SB-86/PT switchboard, the better it's going to treat you when communications are buzzin'.

So-o-o-o-o, here're some PM pointers that you probably already know . . . but you could pass 'em on to your buddy in case he's not with it.

LOSE NO LATCH CORD—Take a quick gander at the latch cord for the rear-access door on the TA-207/P jack field section. That cord can be snapped off, torn off, or mangled off . . . then lost because it's no longer anchored. The main thing: Be sure you don't close the door on this cord. That'll chew it up fast.



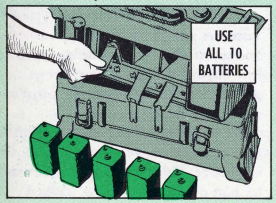
The SB-86/PT Switch Board

It's a known fact, man—the better you treat your SB-86/PT switchboard, the better it's going to treat you when communications are buzzin'.

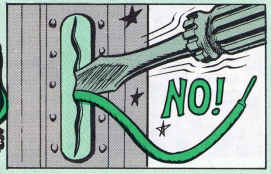
So-o-o-o-o, here're some PM pointers that you probably already know . . . but you could pass 'em on to your buddy in case he's not with it.

LOSE NO LATCH CORD — Take a quick gander at the latch cord for the rear-access door on the TA-207/P jack field section. That cord can be snapped off, torn off, or mangled off . . . then lost because it's no longer anchored. The main thing: Be sure you don't close the door on this cord. That'll chew it up fast.

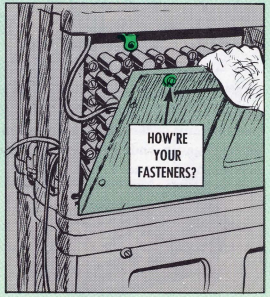
POWER SUPPLY BATTERIES — When you're installing BA-200/U batteries in the PP-990/G power supply, remember to get all 10 batteries behind the door assembly that holds 'em. Naturally, you wouldn't get a bit careless and end up bustin' off one of the latches. If you leave out a battery accidentally, the power supply will work, but it'll be weakened and won't be pumping out real efficiently.



WATCH THOSE GASKETS — You probably already know that the rubber gaskets in the sides of your TA-207 shouldn't be opened except to install field wire. It goes without saying that, in any event, no screwdriver should ever be used to open the gaskets. It's also wise to be extra-careful when you're totin' the TA-207, since accidentally striking the gaskets against some sharp object could cause trouble.



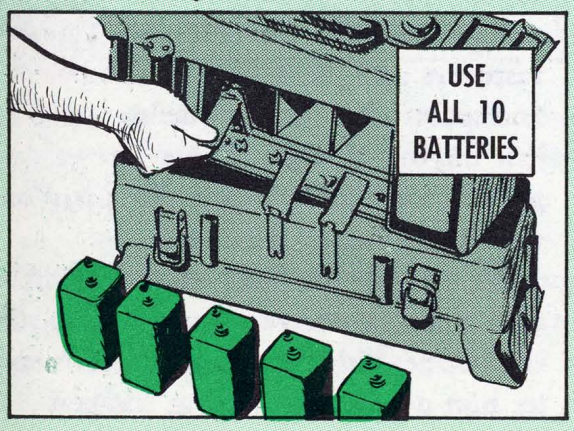
TWIST FASTENERS — Every once in a while, check the twist fasteners on the rear-access door of the TA-207. Thing is, if you leave these fasteners strictly alone, they can work loose and get lost. A little finger checking helps keep in touch.



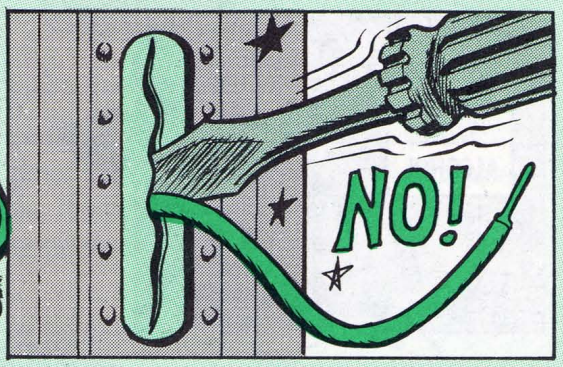
PS MORE

86/PT BOARD

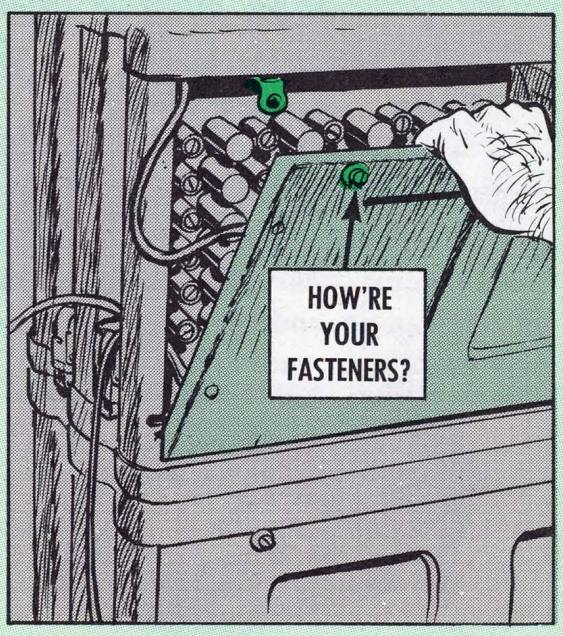
POWER SUPPLY BATTERIES — When you're installing BA-200/U batteries in the PP-990/G power supply, remember to get all 10 batteries behind the door assembly that holds 'em. Naturally, you wouldn't get a bit careless and end up bustin' off one of the latches. If you leave out a battery accidentally, the power supply will work, but it'll be weakened and won't be pumping out real efficiently.



WATCH THOSE GASKETS — You probably already know that the rubber gaskets in the sides of your TA-207 shouldn't be opened except to install field wire. It goes without saying that, in any event, no screwdriver should ever be used to open the gaskets. It's also wise to be extra-careful when you're totin' the TA-207, since accidentally striking the gaskets against some sharp object could cause trouble.



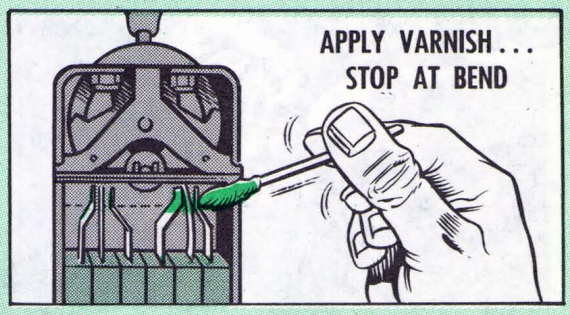
TWIST FASTENERS — Every once in a while, check the twist fasteners on the rear-access door of the TA-207. Thing is, if you leave these fasteners strictly alone, they can work loose and get lost. A little finger checking helps keep in touch.

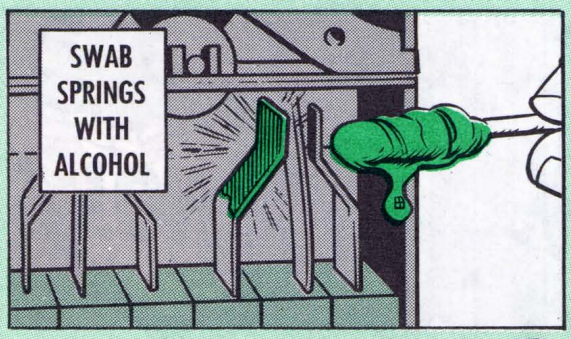


PS MORE

SPRINGS CAN CORRODE — When the humidity's high and harrowing, when the sogginess is getting to the contact springs of the TA-208/P and TA-220/P cord and operator packs of your switchboard . . . that's when corrosion is calling. Enough corrosion can lay out your SB-86 for a good, long count, but there's a way or 2 to make it keep its distance:

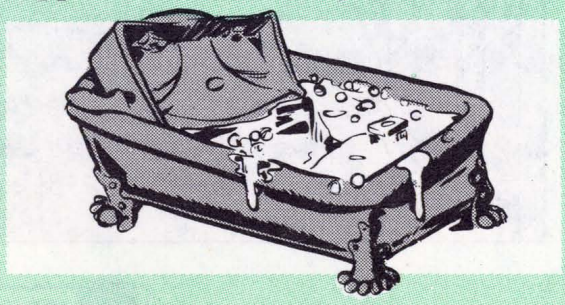
At least once a month, give the contact springs a good swabbing with rubbing alcohol (FSN 6505-299-8095) or cleaning compound (FSN 6850-597-9765). You can use applicator FSN 6515-303-8250 for the swabbing.





After cleaning the springs, use a cotton swab to apply varnish. Take it easy on this. You don't need much, just a light coat, and be sure to stop at the bend of the spring so you won't be swabbing the contacts and doin' some unplanned insulating.

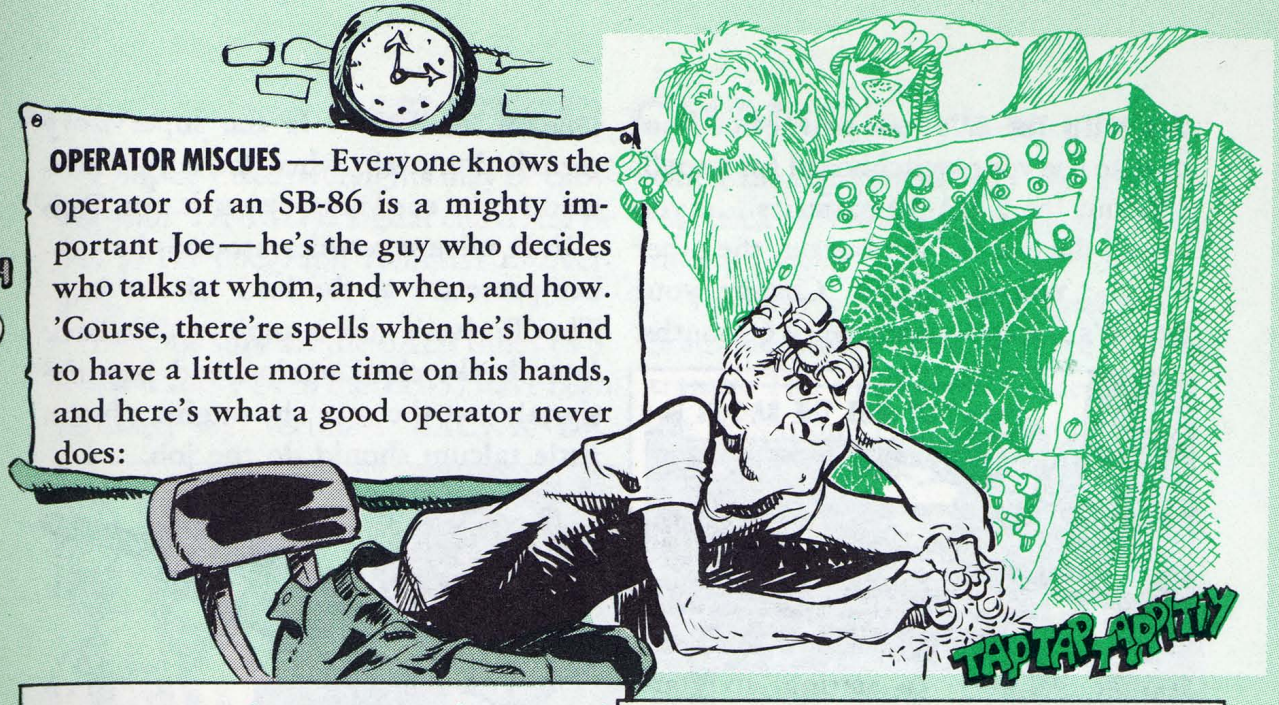
CLEAN AND VARNISH — If you're sweltering in a high-humidity area, the cord and operator packs ought to get a complete clean-up and revarnishing from support at least once a year.



USE A SCREWDRIVER — Never improvise a screwdriver for the rear-cover Camloc fasteners and the screws to the battery and spare-parts compartment . . . you're just buying trouble. These screws can get all botched up when you turn 'em with the wrong instrument.

So, either talk your unit repairman out of a screwdriver (since you're not issued one with the equipment), or else let him do the unscrewing for you.

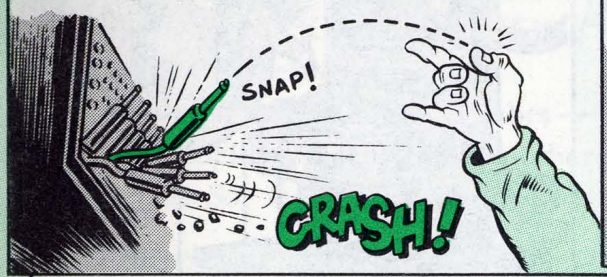
OPERATOR MISCUES — Everyone knows the operator of an SB-86 is a mighty important Joe — he's the guy who decides who talks at whom, and when, and how. 'Course, there're spells when he's bound to have a little more time on his hands, and here's what a good operator never does:



Never remove the protective nut from a signal light. With the nut gone, you could get that cateye stuck for a support job.

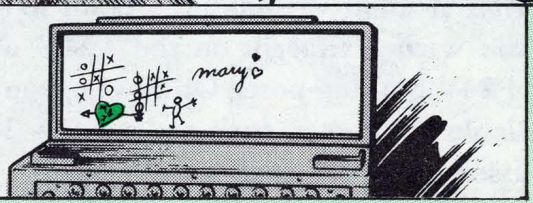
Never fiddle with the switches just for something to do. This just puts extra wear 'n' tear on 'em and they get plenty of this anyhow.

Never let the plugs bounce back into place instead of giving 'em the gentle touch. That bouncing can cause a cracked signal lens, yessirree.



Never twist the call and answer cords. This hapless habit can be mighty rugged on the cords. The wiring can absorb just so much twisting and turning, then, zap . . . it cracks. . . .

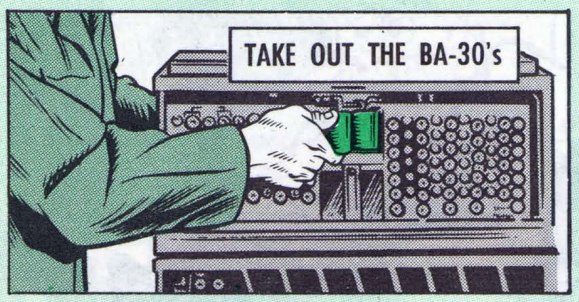
Never etch cute pictures on the log plate, either with a pencil, pen, or even a screwdriver. That log's for important stuff, not for doodling around.



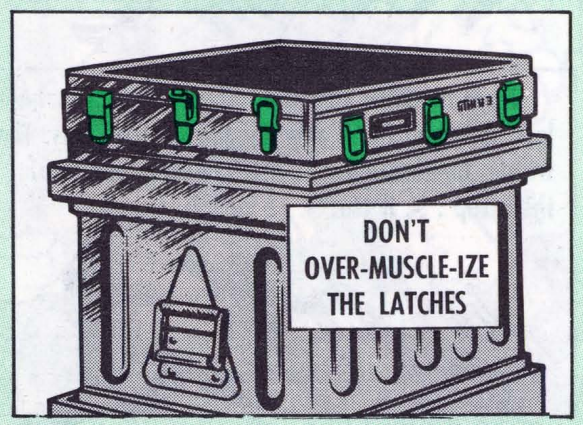
CONNECTOR CARE — When you're replacing a cord pack, you're bound to get along OK just as long as you make sure the terminal connectors are out of the way. But if they're caught between the pack and the chassis, those connectors could get squashed.

P.S MORE

OUT WITH THE BA's — If you're not planning to use your switchboard for a spell, take out the 2 BA-30 batteries . . . you know, the one for the buzzer, the other for the talking circuit. Change your BA-30's for fresh ones every 6 months.



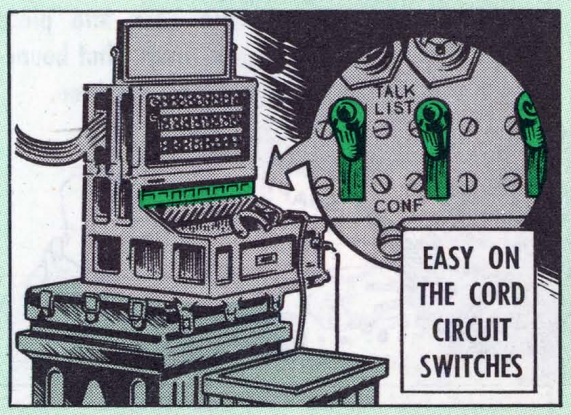
SECTION LINE-UP — In setting up your switchboard, line up the sections carefully before attempting to fasten them together. If you try to fasten 'em when they're not properly alined, you can bend the trunk-type latches by exerting too much pressure on 'em. Then you might break the latches tryin' to straighten 'em.

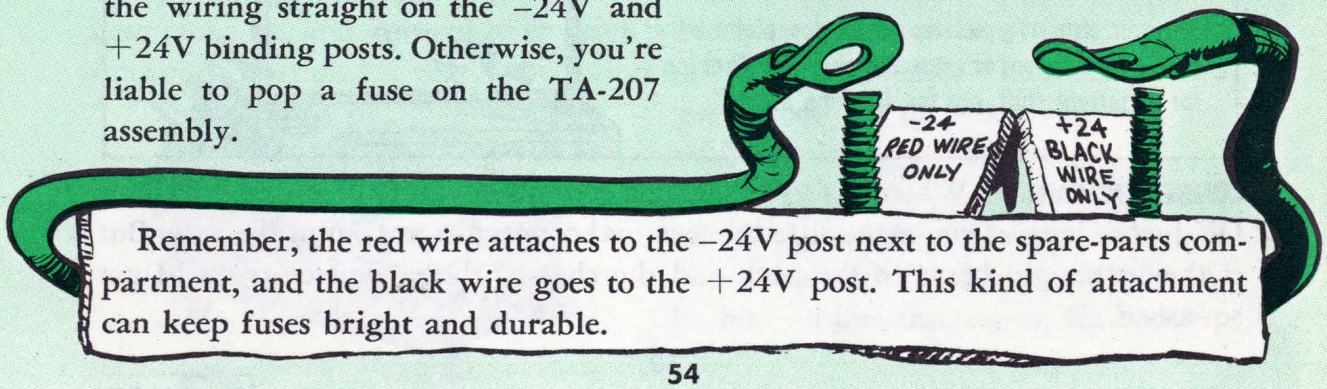


WIRE IT RIGHT — Make it a point to get the wiring straight on the –24V and +24V binding posts. Otherwise, you're liable to pop a fuse on the TA-207 assembly.

SMOOTH THE WAY — If the supervisory signals don't trip when the cord's lowered in the cord seat, sweat it not. Rub a little talcum powder around the rubber protector at the back of the jack. That'll give 'er the oomph to slide back into the keyshelf section and trip the signal, just the way she oughta. Just a little talcum should do the job.

LIGHT TOUCH — The cord circuit switches don't rate a lot of heavy muscle . . . all that's needed is a light finger-touch, an easy push or pull. Too much muscle in this operation could cause mangling of the mechanism just below the surface of the cord pack.



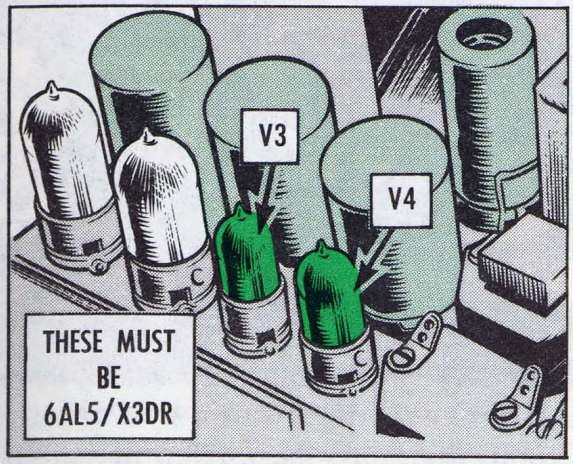


Remember, the red wire attaches to the –24V post next to the spare-parts compartment, and the black wire goes to the +24V post. This kind of attachment can keep fuses bright and durable.

HEATED CHANGE

Coupla' three oversights may be causing your TA-182/U signal converter or TH-5/TG telegraph terminal to overheat.

Like, be sure all the 6AL5 tubes (V3, V4, V6 and V14 in the TH-5) have been replaced by rectifiers 6AL5/X3DR,

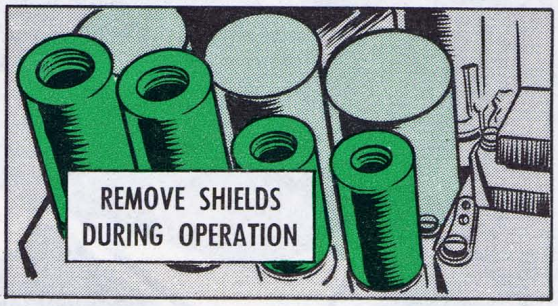


FSN 6130-076-3545. Also, the 6X4 tubes (V13 and V15) have been replaced by 6X4/IDR, FSN 6130-076-3546 rectifiers. The word, if you missed it, is in Ch 1 (Feb 65) to TM 11-5805-246-20P.

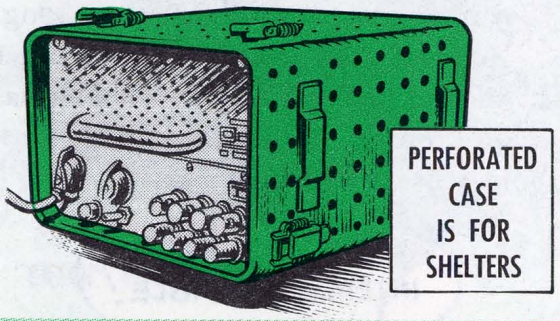
Unlike the 6AL5's and the 6X4's, neither the 6AL5/X3DR nor the 6X4/IDR requires tube shields.

However, if you've got older tubes — with the shields — you've got another heatmaker. So, remove all the shields when the equipment is in use, and put 'em back only when you're transporting the equipment.

The only purpose of the shields is to hold the older tubes in place during transit. The shields aren't needed during operation. The rectifiers fit snugly and don't need the shields at any time.



Heatmaker No. 3 for both TA-182 and TH-5 can be the solid cabinet case (FSN 5805-615-6503). TB 750-911-1 (Oct 68) authorizes its replacement (at unit level) by perforated case FSN 5805-167-7884 when the components are used in a shelter.



WARM IT UP

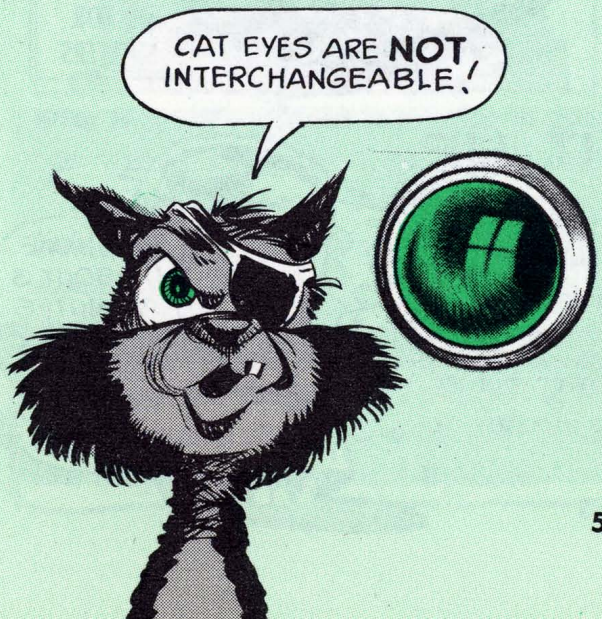
It's that warm talk that does the job . . . and stops the big blow out on vacuum tubes and such, which means key your mike and contact the tower . . . after your radio transmitter gets warm.

Slip your set about 3 minutes of power before transmitting, or longer if specified in the aircraft or the radio TM.

ABOUT THOSE CATEYES — The cateye covers of the SB-22/PT and the SB-86/PT switchboards look alike — but they are **not** interchangeable.

The 2 sets of cateyes operate with different voltages, so if there's any substitution, they won't roll around the way they're supposed to. At least not long.

You can tell one lens from the other by the finish. The SB-22 lens-holder has a dull nickel finish; the SB-86 lens-holder has a painted finish.



If those cateyes don't roll around right, there may be foreign matter in 'em. A cateye can stick from a dose of dirt, dust . . . or even a tiny piece of metal from the lens-cover threads.

Sometimes those hermetically sealed cateyes just stop working. But a small magnet held just above the line signal can work wonders in freeing the eyes. Banging on the switchboard to roll back the cateye is not recommended.

To clean the cateyes and designation strips, use a water-dampened cloth. Too much sludge, for too long a time, can

ABOUT THOSE CATEYES — The cateye covers of the SB-22/PT and the SB-86/PT switchboards look alike — but they are **not** interchangeable.

The 2 sets of cateyes operate with different voltages, so if there's any substitution, they won't roll around the way they're supposed to. At least not long.

You can tell one lens from the other by the finish. The SB-22 lens-holder has a dull nickel finish; the SB-86 lens-holder has a painted finish.

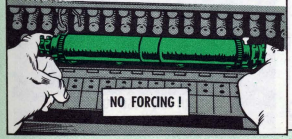
If those cateyes don't roll around right, there may be foreign matter in 'em. A cateye can stick from a dose of dirt, dust . . . or even a tiny piece of metal from the lens-cover threads.

Sometimes those hermetically sealed cateyes just stop working. But a small magnet held just above the line signal can work wonders in freeing the eyes. Banging on the switchboard to roll back the cateye is not recommended.

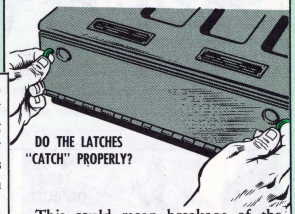
To clean the cateyes and designation strips, use a water-dampened cloth. Too much sludge, for too long a time, can short out your switchboard and drop it right on the non-operational list.

Naturally, a sharp tool isn't much good for freeing a stuck line signal. It'll jam the eye and push the switchboard that much closer to high maintenance. Use your finger, lightly, to get the cateye to roll. If the lens is cracked or broken, put in a new one.

EASY DOES IT — There's an easy way, and a hard way, to put back the battery in your SB-22. If there's any forcing against the contact clips for the battery case, the clips can be broken. The clips can be bent if the battery box goes in slantwise instead of evenly.



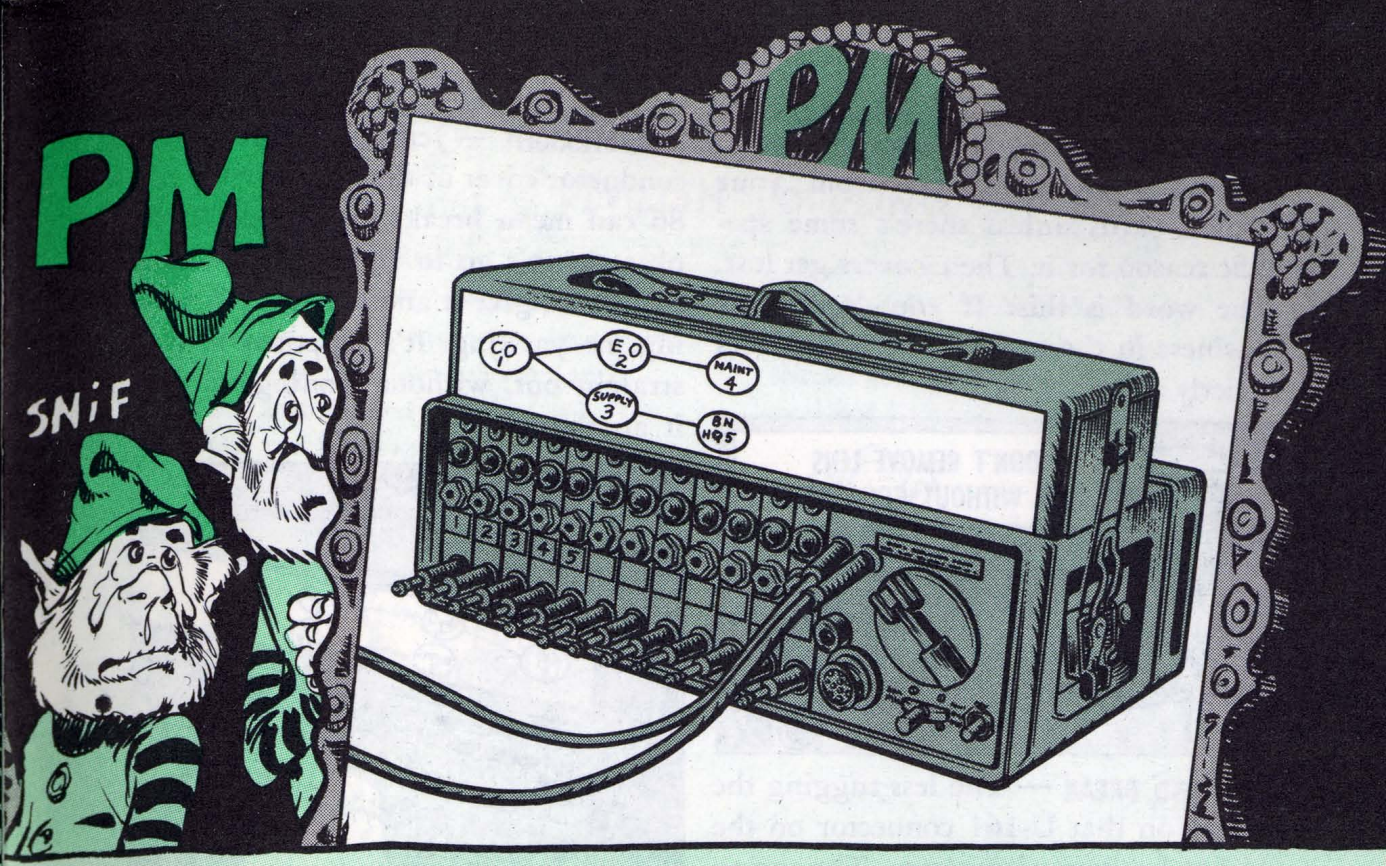
CATCH THE LATCHES — Be careful with the hold latches on the back cover of the SB-22. These can fail to catch properly and can stick out when you've closed the cover.



This could mean breakage of the latches when the switchboard is transported or loaded into a vehicle.

Put a drop of light oil on the inside latchspring, to help the latches catch the way they should. Remove all dirt and dust from the recessed areas.

PS MORE

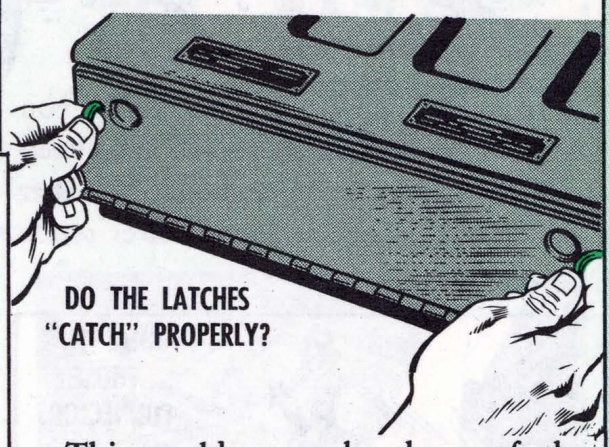


short out your switchboard and drop it right on the non-operational list.

Naturally, a sharp tool isn't much good for freeing a stuck line signal. It'll jam the eye and push the switchboard that much closer to high maintenance. Use your finger, lightly, to get the cat-eye to roll. If the lens is cracked or broken, put in a new one.

EASY DOES IT — There's an easy way, and a hard way, to put back the battery in your SB-22. If there's any forcing against the contact clips for the battery case, the clips can be broken. The clips can be bent if the battery box goes in slantwise instead of evenly.

CATCH THE LATCHES — Be careful with the hold latches on the back cover of the SB-22. These can fail to catch properly and can stick out when you've closed the cover.



This could mean breakage of the latches when the switchboard is transported or loaded into a vehicle.

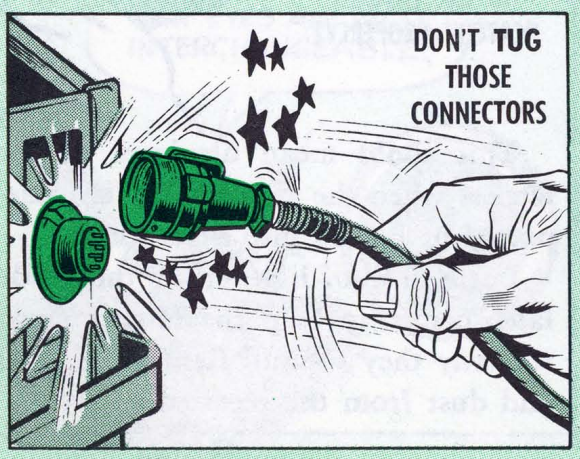
Put a drop of light oil on the inside latchspring, to help the latches catch the way they should. Remove all dirt and dust from the recessed areas.

PS MORE

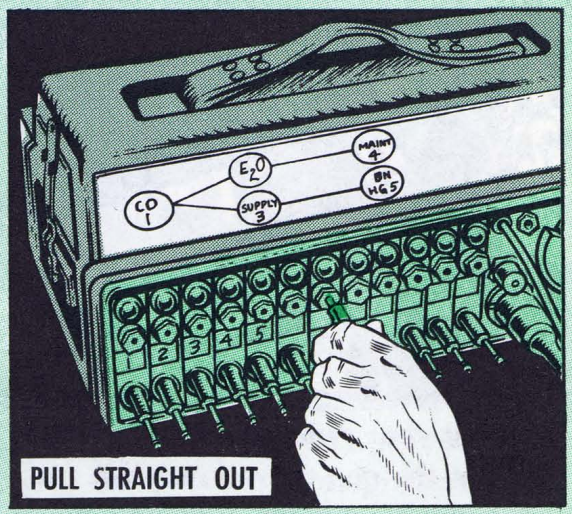
COVERS GET LOST — It's always risky to remove the lens covers from your switchboards unless there's some specific reason for it. These covers get lost. The word is this: If you don't have business in there, leave the lens covers strictly alone.

TUG AND BREAK — The less tugging the better on that U-161 connector on the H-144 headset-microphone. The spring sheath can break, and this sheath's a non-stockage item. This spring can be

broken just below the connector, if you do any pulling on it. Its job is to keep the cord from being crimped, and if it comes up broken, it doesn't offer much protection, does it?

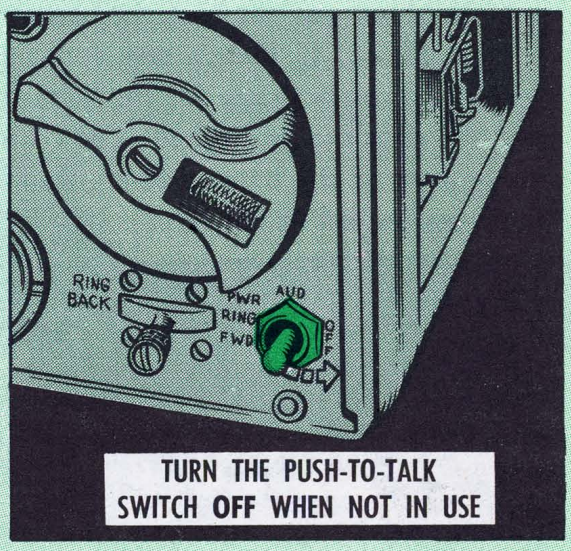


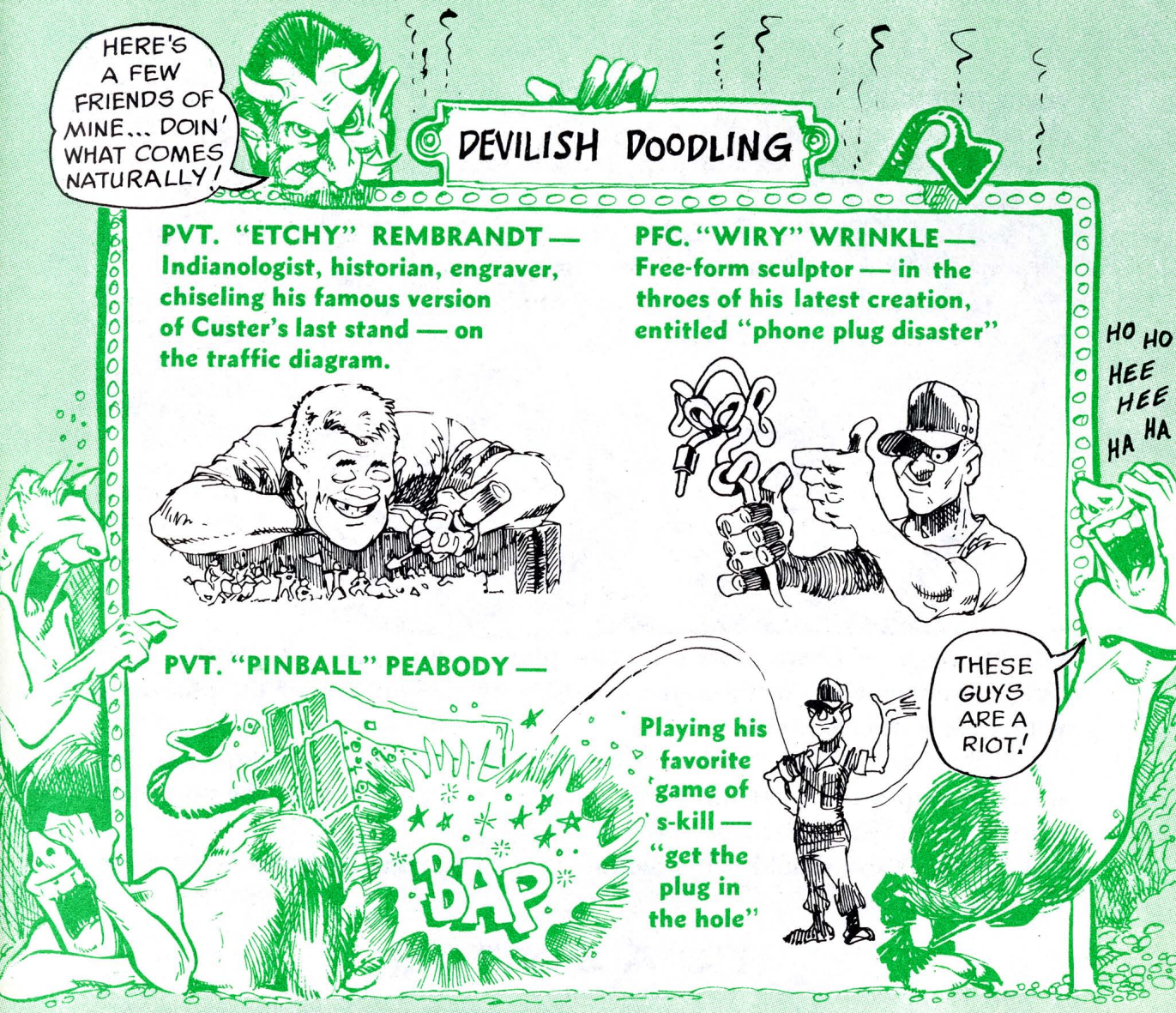
PULL STRAIGHT — Jerking on the rubber conductor cover of the SB-22 or the SB-86 can mean breaks and splits. If the plug doesn't go in right the first time you try it, give it another try. No jerking, no yanking. It's supposed to pull straight out, without binding, so give it another chance.



OFF FOR NO-TALK — When your SB-22 is in the midst of a talkless spell, turn the push-to-talk switch to OFF.

If you leave the switchboard powered and on, you could end up with a knocked-out transmitter carbon element. The ON position also eats up those BA-30 batteries.





The plug can suffer from bouncing against the front of the switchboard, and there's a chance it could bong out a signal light. The wiring of the cord also can suffer when there's knot-tying doodling.

WET'S NOT GOOD — Moisture's a dirty dog. You can get it in such forms as rain, dew, and fog — and it could overwhelm your switchboard.

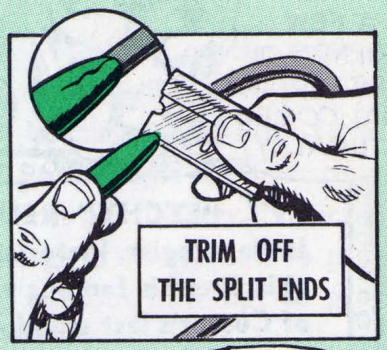
But there's a workable answer to the moisture problem, like a clean, lint-free cloth with which you wipe the wiring, as well as the cords and plugs. And you could take a few licks at the headset, the connections, binding posts, terminals, pack and line-pack. This oughta keep you in business.

PS MORE

DOING THE SPLITS? — Getting splits on that rubber protector for your electrical cord assembly?

The protective sleeve can develop tears and splits, but here's what you do:

Take a single-edged razor blade or a sharp knife, cut around the cord and trim off the split portion. Then taper the edge of the rubber, and you'll still have a reasonably good sleeve.



KEEP 'EM CLEAN — Check those connector plugs at the brass end. Do they look clean? Are they OK? Well, maybe, but let's try rubbing one of the plug-ends with a piece of crocus cloth.

See? It wasn't clean at all. Crocus cloth really pulls out the hidden dirt. It's smart to keep a chunk of this cloth handy, so you can work on the plug-ends when they are dirty.

You rate—and should get—increased signal strength from those now-clean switchboard plugs.

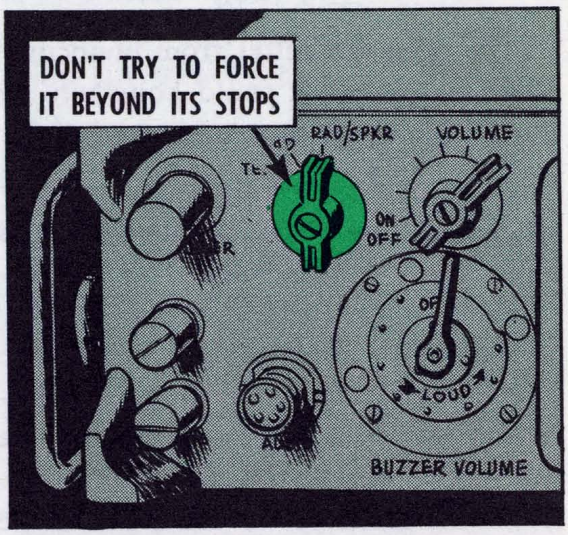
IT'S A SWITCH

The selector switch on your AN/GRA-39 radio remote control unit is made out of pretty reliable plastic—but you'd never want to test its strength by forcing the switch.

If you try to move that switch beyond either of its stop positions, you're liable to end up with the knob in your hand, staring at the switch stub on the control panel.

No use, either, of trying to force the switch if it happens to bind. Any sign of a switch-bind means a trip to support for a fix, not force.

And be careful not to drop that C-2328/GRA-39 control unit; you could even knock off the selector switch with an accidental drop against a sharp corner or table edge.



NO NOTCHES ON NOZZLE

Dear Half-Mast,

TM 10-1101 (Jul 65), Petroleum Handling Equipment and Operations, says in para 132r that the notches on the handle of the fuel dispensing nozzle must be removed.

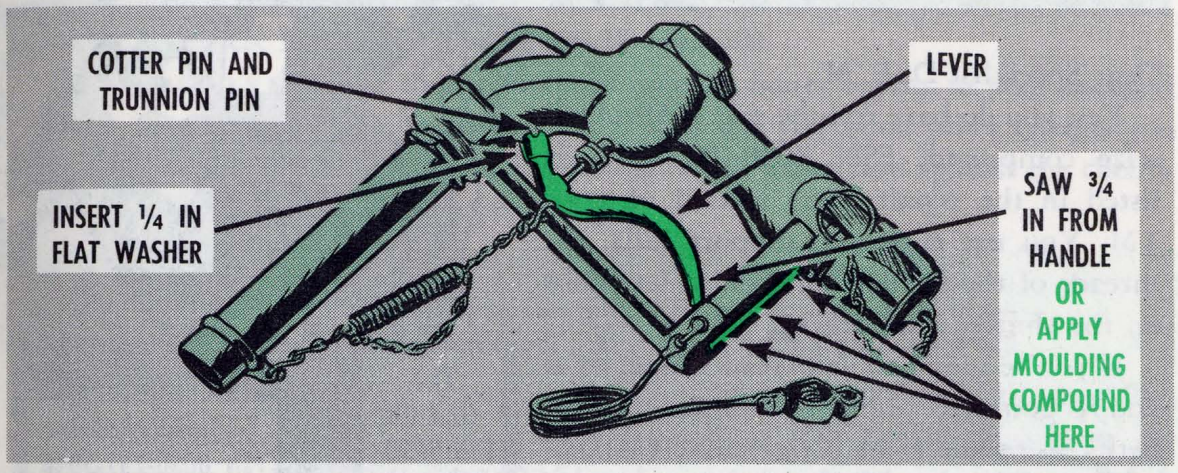
Our unit just received 10 nozzles with notches. What's the best way to remove the notches?

Sgt. E. J. S.

Dear Sergeant E. J. S.,

The reason for removing those notches is to make sure fuel is not dispensed without someone there to watch it.

There are 2 ways to do it. You can cut 3/4 inch from the lever, or you can fill the notches with a compound.



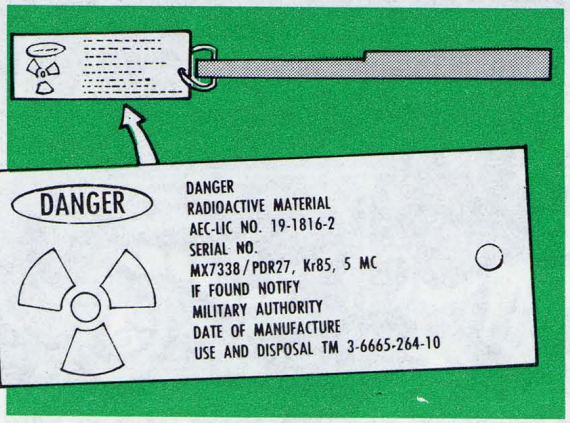
To shorten the lever, take out the cotter pin and the trunnion pin and remove the lever from the nozzle. Saw 3/4 inch from the end of the handle. Smooth the sharp edges and corners with a file. When you replace the handle, insert a 1/4 inch flat washer on both sides of the body so there won't be as much side play of the lever.

Easy does it when you're using that saw . . . don't damage the trigger and valve assembly.

If you're going to use the filler method, you'll want to clean the handle of the nozzle good. Then apply moulding compound, FSN 8030-800-1750, per instructions on the container.

Half-Mast

NEW RADIOACTIVE TEST SAMPLE



Now hear this—The new radioactive test sample, MX-7338/PDR-27R (FSN 6665-832-6159) is the authorized test sample for all radiac sets in the AN/PDR-27 series. It replaces radioactive test samples: MX-1083/PDR-27 (FSN 6665-330-9519), MX-1083D/PDR-27 (FSN 6665-078-5250), and MX-1083B/PDR-27 (FSN 6665-171-4317).

YOUR M59 DOES NEED LUBE

Dear Half-Mast,

Is there any lubrication needed on the M59 field range outfit? TM 10-7360-204-12 (Feb 68) makes no reference at all to lubrication.

SP6 D. E. M.

Dear Specialist D. E. M.,

Yes, you do have to lube that M59. Anti-seize compound, FSN 8030-087-8630, is listed in the repair parts section of your TM. You use it on the support rails, the threads of the burner bolt, and a few dabs on the shutter door tracks.

If you're going to ship your range, or if you're going to put it in limited storage, better use some P-14 preservative (MIL-C-10382) on all parts that food might touch. FSN 8030-251-5048 will get you a gallon can, and 8030-251-5049 a 5-gal pail.

You use PL-S Lubricating Oil, General Purpose, Preservative, VV-L-800 (PL-S) on other parts of the cabinet and burner. FSN 9150-231-6689 is good for a 1-qt can, and FSN 9150-231-9062 will get you 5 gallons.

You can also use the P-14 preservative on your immersion heaters, too.

Half-Mast

WORKING WITH TOPO OR PSYOP EQUIPMENT?

PM YOUR SKIN

Notice any reddening, swelling, oozing, crusting, or scaling of your skin? A short name for that is dermatitis. You may have one or more of those symptoms if you work with topographical or psychological operations equipment.

Those photolithographic chemicals and cleaning agents can cause dermatitis. You can "head it off at the pass" if you use a skin cream.

You can use skin protective compound, chemical barrier, cream type; water soluble; Fed P-S-411. You can get the following in 1-lb jars:

6850-244-4893, Type I,	For protection against staining and adhering products.
6850-244-4894, Type II,	For protection against hydrocarbons, oils, and solvents.
6850-244-4892, Type III,	For protection against acids and alkalis.

You find these listed in Fed Cat 6800-IL (Jan 70).

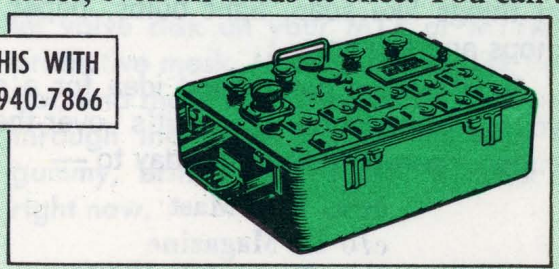
If your skin's sensitive to any of those creams, better report to your medical officer on the double for treatment. He'll also tell you what other creams you can use, in place of those listed above, to give you protection against the chemicals you have to use in your topo or psyop.

PANEL'S THE MARGIN . . .

FOR BATTERY CHARGING

Sore-eyed trying to find a cable set to charge batteries off that new DC generator set, 3-KW 28-V, MEP-026A FSN 6115-017-8329?

YOU GET THIS WITH FSN 6130-940-7866

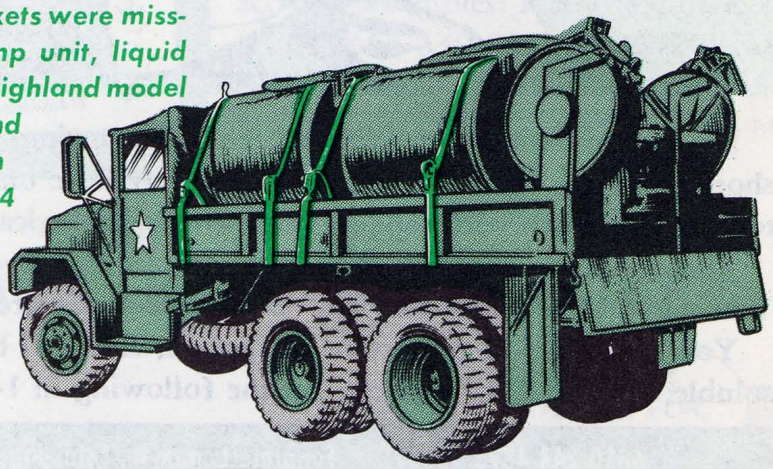


Relax, and get the distribution panel. It's FSN 6130-940-7866, and all in a case with cables like TM 5-6130-301-12 says. That TM has hookup dope for charging 6-volt, 12-volt, or 24-volt batteries, even all kinds at once. You can't use the generator by itself to charge batteries.

Dear Half-Mast,

Tie-down straps and brackets were missing from our tank and pump unit, liquid dispensing, truck mounted, Highland model 2000, when issued. We find no FSN for them, although Fig 2-3 of TM 5-4930-227-14 shows the parts. We need them bad . . . how can we get them?

CW4 R. J. S.



Dear Mr. R. J. S.,

At present, they have no FSN's. You'll have to submit an exception-type supply request. Have your support mark their requisition "hand process," and route it to Managing Activity **AJ.** Ask for:

Kit, Tie-Down, Rough Terrain, FMC 97403, Part No. 5-14-514-7.

Half-Mast

SUPPLY NAME WANTED

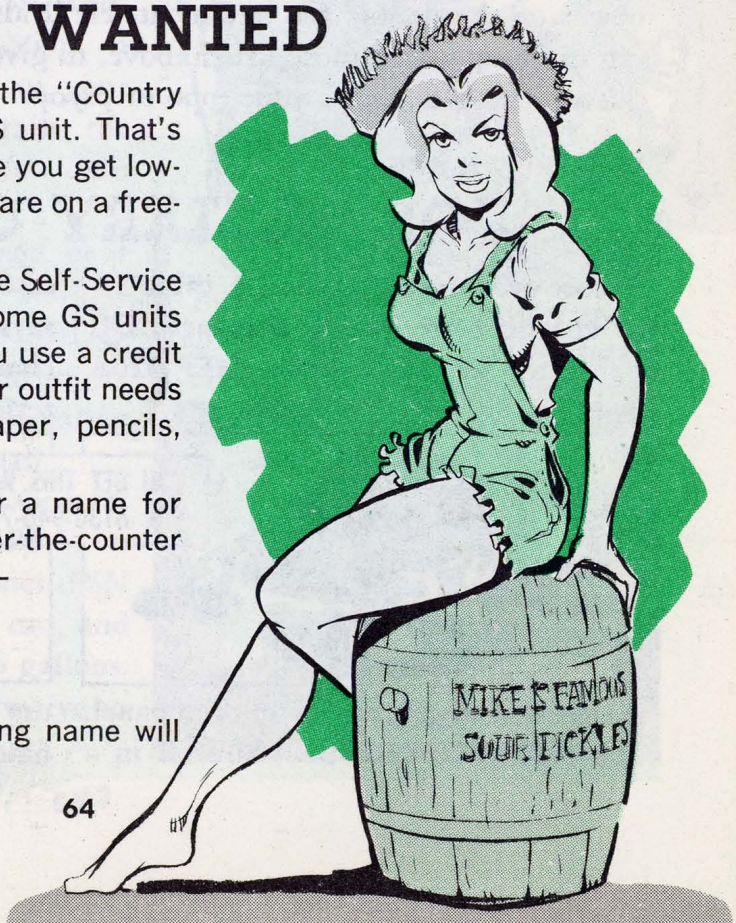
The Army wants a new name for the "Country Store" supply operation at your DS unit. That's the over-the counter operation where you get low-cost repair parts and common hardware on a free-issue basis.

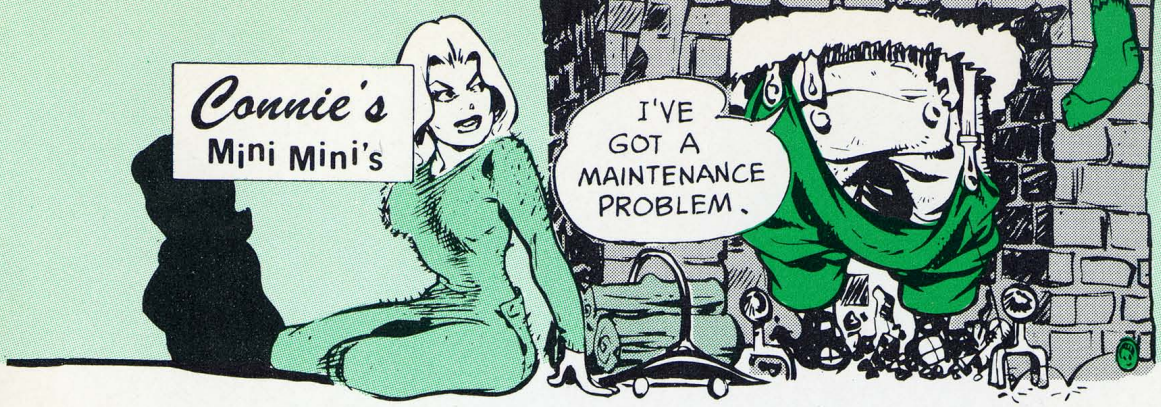
Careful . . . don't mix it up with the Self-Service Supply Center that's operated by some GS units and by most posts. That's where you use a credit card and go in and pick up what your outfit needs of things like soap, light bulbs, paper, pencils, mops and brooms.

So, if you've got a good idea for a name for your maintenance DS unit's over-the-counter supply operation, send it today to —

MSG Half-Mast
c/o PS Magazine
Fort Knox, KY 40121

The guy who sends in the winning name will get a color pinup of Connie.





M151A2 Tire Chain Caution

When you get your new M151A2 ¼-ton truck, you'll find a caution decal on the windshield. It means you can't use tire chains like those issued for the older M151-series vehicles. You'll find a body interference condition.

New-design tire chains will be coming along for the M151A2.

But if you've got a real need for tire chains on your M151A2 and can't wait for the new ones, you can get by with the standard M151 chains — after some changes are made in the chains and also in your M151A2 body. The instructions for doing the job are in EIR Digest, TB 750-981-4 (15 Oct 70).

PAR From It...

PARdon the pun, but we didn't make par on zero defects in that AN/MPQ-35 PAR item on page 25, PS 215. The last sentence in the fourth paragraph should've read: "The needle should rest on '0' when you're transmitting in the midband of the frequency range." Actually, when you're on either side of midband, the needle could be anywhere.

P/U Manual Change Out

Best check your TM 5-6115-365-15 to see whether you got Ch 2 (Apr 70). Besides piles of new word on PU-409/M and-409A/M, it adds PU-628/G and PU-629/G. It has everything new from Chap 17 on . . . besides a load of fresh parts FSN's. Nowhere else on earth do you find such good info on 25 different generators.

Wrong FSN

Whoops, that should've been FSN 2530-737-3250 in "Take No Chances," PS 216, page 65 — not FSN 2530-373-3250. The right FSN, in TM 9-2320-209-20P w/Ch 1 & 2 (Apr 69), is for the front wheel brake hose — either right or left side — on your G742-series 2½-ton truck. Keep a close eye on those 2 hoses and get 'em replaced if they look bad — like it said in PS 216.

Protective Mask PM

Take a real close look now at the outlet valve disk on your M17 or M17A1 protective mask. Make sure the disk lies flat, and that its tail's pulled all the way through the valve seat. If the disk is gummy, brittle, or cracked, replace it right now.

Would You Stake Your Life right now on the Condition of Your Equipment?

For want of a..
GOOD FSN
CORRECT NOMENCLATURE
COMPLETE NOMENCLATURE
GOOD REFERENCE
THE
TRUCK
WEAPON
GRADER
RADIO
WAS LOST
BN(DS) SUPPLY
WE CAN'T SEND YOU A PART WE CAN'T IDENTIFY!